

MARCH 14, 1960

PURCHASING

An aerial, high-contrast black and white photograph of a complex highway interchange. The image shows multiple levels of overpasses and ramps. In the lower-left foreground, a large commercial airplane is parked on a tarmac or taxiway. The overall scene is industrial and conveys a sense of large-scale infrastructure and transportation.

TRANSPORTATION:

A \$20 Billion Buying Problem

A CONOVER-MAST PUBLICATION

SEVENTY-FIVE CENTS

George Harrison
Table of Contents... Page 5



Who will pick up the gauntlet?

"How will we use it?" scientists ask as they strive to meet the challenge of an unusual molecule with extraordinary properties. Will it lead to a new plastic? Better rocket fuel? A cure for the common cold?

Now Shell Chemical offers a molecule (in commercial quantities) with a myriad of uses—*acrolein*. Pronounced ah-crow'-lee-in, it links to many other molecules to create whole new families of chemical

derivatives. Some venturesome spirit with an eye to the future will accept the challenge presented by acrolein. In picking up the gauntlet, he may well trigger the most successful new product of 1965.

With a promising steppingstone to new materials, Shell Chemical helps American ingenuity set the future in motion.

Shell Chemical Company

Chemical Partner of Industry and Agriculture

NEW YORK

For More Information Write No. 151 on Inquiry Card—Page 32





**You can tell
the **SKF** man
by his complete line of bearings !**

He's the only bearings specialist offering all four major types of ball and roller bearings—thousands of sizes and endless variations! So, he's also the only specialist who can offer *unbiased* help in selecting the exact bearings you need. And remember, when buying bearings for replacement purposes — call on your nearby *Authorized SKF Distributor*.

6002





How **B&W JOB-MATCHED TUBING** helps you engineer-for-profit

You can count on B&W Tubing to help reduce costs and make a better product because from B&W you can get:

- ... a choice of either seamless or welded types to meet your job requirements economically.
- ... standard or special specifications to help simplify fabrication.

... engineering help in your selection of the *one* tubular product best suited to your needs.

These are just a few of the reasons why it pays to specify B&W Job-Matched Tubing. Call your local B&W District Sales Specialist, or write for Bulletin TB-361 for full details. The Babcock & Wilcox Company, Tubular Products Division, Beaver Falls, Pennsylvania.



TA-9029-G5

B&W

THE BABCOCK & WILCOX COMPANY

TUBULAR PRODUCTS DIVISION

Seamless and welded tubular products, solid extrusions, seamless welding fittings and forged steel flanges—in carbon, alloy and stainless steels and special metals

For More Information Write No. 156 on Inquiry Card—Page 32

B.F. Goodrich

See how little it costs to protect people, products and loading docks

For prompt delivery on these products, phone your nearby B.F. Goodrich distributor. He can also give you full information on the many other types of clothing, gloves and industrial rubber products made by B.F. Goodrich. *B.F. Goodrich Industrial Products Company, Dept. M-781, Akron 18, Ohio.*



Well suited

Deluxe work suit made of nylon coated with yellow neoprene. Bib-type overalls and jacket are generously cut for comfortable fit. Suit is oilproof, resists acids, grease, most chemicals. Weighs only 2½ lbs. in medium size. Made with fabric that's 4 times stronger than ordinary coated fabrics. Has extra reinforcement built in at seams and strain points.

\$16.88 complete



Softens the blow

Tough rubber bumpers for use on all types of loading docks to protect trucks and platforms from damage. Bumpers absorb crashing impact, resist abrasion, scuffing, weather. Two types: one all rubber, the other with a metal backing. Prices, depending on size, type, quantity and color, begin at

\$8.00 each

Special handling



3-gallon rubber bucket for safe handling of corrosives. Takes rough handling and banging. Won't dent, leak, break or mar surfaces. Dripless spout. Graduated scale on inside. Stainless steel handle locked into bucket —can't be pulled off. In lots of 6, the cost is

\$8.68 each

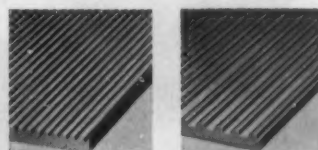


All hands safe

Koroseal coated canvas gloves give added protection and longer service on jobs where abrasion and gouging shorten the life of ordinary gloves. Koroseal won't chip, crack or peel, resists oil, grease, chemicals, most acids. Made in three styles. 8" knit wrist gloves cost only

\$8.85 per dozen

Koroseal—T. M. Reg. U. S. Pat. Off.



Sure footing

Runner matting made of Koroseal prevents accidents on slippery floors. Lasts 20 times longer than rubber, looks better, lies flatter, costs no more. Bright, glossy surface cleans easily, doesn't tear. Resists abrasion, acid, caustics, oils and fats. Choice of two styles: 24" and 36" widths; black, brown, grey. Prices start at

\$1.92 per lineal yard

Slightly higher west of the Mississippi

Can't beat this band



It's a snap to hold cartons together with a B.F. Goodrich pallet band. Just one band placed around the top layer steadies an entire pile of cartons stacked on a pallet or in storage. Virtually eliminates danger of product breakage. Goes on fast, grips snugly, won't crush light cartons, can be reused. In 1000-band lots, prices start at

16¢ each

B.F. Goodrich



Emery Extras...at no extra cost

"You say
you can't get
'after-hours'
pickups..."

THEN CALL EMERY AIR FREIGHT.

Emery gives 24-hour pickup in over 550 market areas. But that's not the only extra Emery gives you—at no extra cost.

For example, you get use of *all* airlines, teletype control and nationwide coverage.

And the cost is *less* than you think.

On most commodities to 52 key cities, Emery costs less than other air freight services.

We would like to show you what Emery can do for you—on inbound or outbound shipments. Call our Representative or write us.

We'll be glad to send you free a full color 30" x 20" Air Freight Market Map on request.



EMERY AIR FREIGHT

801 Second Ave., New York 17. "EMERY—Worldwide Blue Ribbon Service"

For More Information Write No. 157 on Inquiry Card—Page 32

PURCHASING

The Methods and News Magazine For Industrial Buyers

MARCH 14, 1960

VOLUME 48, No. 6

B. P. MAST

Chairman of the Board

B. P. MAST, JR.

President

RAY RICHARDS

Vice President and Publisher

Purchasing Previews

Straws in the Trade Winds	7
Purchasing Opinion Poll: Personal Relations With Vendors	11
Special Industry Report: Copper	15
Washington Report	21
Editorial: The Facts About Craft	67
Purchasing Pointers	69
Transportation: Another Challenge for Purchasing	70
How to Cut Traffic Costs	W. H. Pritchard 72
Rockwell Rips Into Freight Costs	76
Traffic Tips for the Small-Company P. A.	Leonard S'cane 78
Cut Costs With Air Freight	John Van de Water 80
When You Need More Help on Traffic	83
How to Figure Your Freight Charges	James Stancill, Jr. 84
Transportation, Government Urges More Competition	A. N. Wecksler 86
Legal Aspects of Transportation	Lyle E. Treadway 88
New Machine Welds Steel Sections Rapidly, Economically	94
Pack in Foam for Featherweight Protection	100
Instant Inventory Control	164

REGULAR FEATURES

In Purchasing	65	Office Equipment and Supplies	164
Purchasing Follow-up	27	Association News	176
Information for Your Catalog Files ..	42	Book Reviews	192
Letters to the Editor	48	News	208
Purchasing People	52	Industry	218
F.O.B.	62	Employment Service	222
Products and Ideas	94		

Index to Advertisers 226

Editorial Staff

Stuart F. Heinritz
Senior Editor

Paul V. Farrell
Editor

Dean Ammer
Executive Editor

Ned Kellogg ... Associate Managing Editor
Leonard S'cane ... Associate Editor
John F. Sincere ... Midwestern Editor
John Van de Water ... Technical Editor
Walter E. Willets ... Consulting Editor
L. J. De Rose Editorial Marketing Consultant

Harold C. Barnett. Assoc. Managing Editor
Mary T. Rogan ... Editorial Assistant
A. N. Wecksler ... Washington Editor
A. W. Gray ... Legal Editor
T. C. DuMond ... Contributing Editor
Robert Gunning ... Readability Consultant

ART STAFF

E. Carlton Arink ... Art Director
John Drain ... Associate Art Director

PRODUCTION STAFF

L. E. McMahon ... Production Manager
Barbara Grant ... Production Supervisor

CONOVER-MAST PUBLICATIONS, INC.
EDITORIAL AND EXECUTIVE OFFICES
205 East 42nd Street, New York 17,
New York

© 1960 by C-M Business Publications, Inc. PURCHASING is an independent journal, not the official organ of any association. Established 1915 as "The Purchasing Agent," Consolidated with "The Executive Purchaser." Contents are indexed monthly and annually by the Engineering Index Service and Business Periodicals Index. PURCHASING is published every-other-Monday by C-M Business Publications, Inc., subsidiary of Conover-Mast Publications, Inc., at 440 Post Road, Orange, Conn. Editorial and executive offices, 205 East 42nd Street, New York 17, New York. Volume 48 No. 6 Subscription rates: United States, U. S. Possessions and Canada: \$4.00 per year; single copies 75 cents; elsewhere, \$20.00 per year; single copies, \$1.00. Second-class postage paid at Orange, Conn. and at additional mailing offices.

SUBSCRIPTION CORRESPONDENCE AND CHANGE OF ADDRESS: Write to Circulation Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, N. Y. Please give title and company affiliation in all correspondence. Notify us promptly of any change of address. Be sure to give old as well as new address; include postal zone number, and new company name and title. Enclose address label from a recent issue, if possible. Since mailing labels are addressed in advance, please allow 5 weeks for change to become effective.

MARCH 14, 1960



Plexiglas glazing could have saved this replacement cost!

Have you checked the figures lately on your cost of replacing broken windows? Chances are that it is high, and here's a money-saving solution. Use PLEXIGLAS® acrylic plastic. PLEXIGLAS window glazing withstands impact, shock and vibration. It is lightweight . . . weather-resistant . . . easily installed. Call your nearest distributor for advice and service on clear transparent sheets or tinted and translucent colored sheets. He is listed under PLEXIGLAS in the Plastics section of telephone directories in major cities.



Chemicals for Industry

**ROHM & HAAS
COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

*In Canada: Rohm & Haas Company of Canada, Ltd.,
West Hill, Ontario*

CALL YOUR AUTHORIZED PLEXIGLAS DISTRIBUTOR

PROMPT DELIVERY • TECHNICAL ADVICE • FULL RANGE OF SIZES AND COLORS

For More Information Write No. 158 on Inquiry Card—Page 32

Straws in the Trade Wind

► **RAIL FREIGHT SLOWDOWN**—Although rail freight traffic has fluctuated with the business cycle it has shown no real growth in the past 15 years. At the same time, passenger business has been severely cut. Last year, freight traffic on the railroads amounted to 582 billion ton-miles, says the National Industrial Conference Board. However, in the years 1946-50, the annual average was 609 billion ton miles. The railroads' share of total freight traffic fell from 62% in 1946-50 to 46% in 1959.

► **SO SOON?**—A new inventory recession that may come as soon as the second quarter of 1960 is the prediction of a leading economist. Eliot Janeway, who contends that "hopes for a new inventory recovery were dashed" in the first quarter, notes that "we are now colliding with the economic equivalent of the law of gravity. The 1959 boom anticipated and borrowed from the prosperity predicted for 1960."

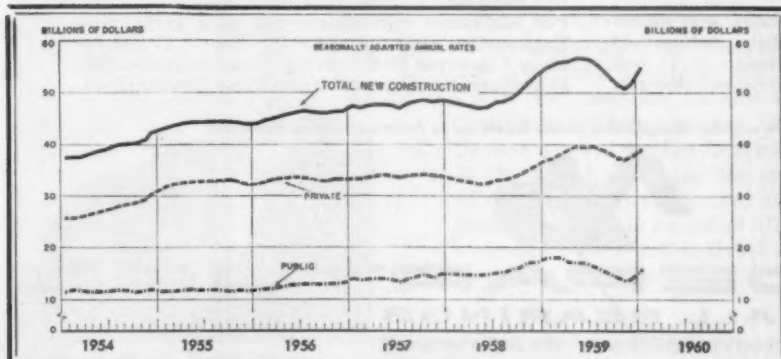
► **AMERICAN OR FOREIGN?**—Is a product made in a U.S. plant with foreign components an American or foreign item? That's a problem facing many P.A.'s who want to "Buy American." For instance, some radios are assembled here but use imported parts to a great extent. And some companies feature a "Made in U.S." slogan, but buy substantial components and materials overseas.

For the P.A.'s Hot File . . .

Those who remember the Deep South of the 1930's will be pleasantly surprised today. Drive through any southern town and you're almost certain to see a spanking new plant. Yankee purchasing agents are looking southward in the quest for new and more efficient suppliers. The reason: lower costs. One Detroit P.A. reports he switched to a North Carolina vendor with labor costs of \$1.25 an hour. His former supplier in the North had costs of \$3.14 per hour.

► **WHITE COLLAR UNIONS**—Labor's chances of unionizing white collar employees are better now than ever before, says McKinsey & Co., management consultants. Why? Because the salaried employee is increasingly aware of the narrowing gap between himself and the hourly worker in pay and benefits. What should a company do to prevent unions from winning over white collar employees? Among McKinsey's suggestions are: set up a salary structure that reflects proper relationships among jobs in the company, let employees know how they stand at their jobs, and do everything you can to increase job satisfaction. (Turn Page)

Construction Rises Again



Spending for new construction rose \$3 billion in January to an annual rate of \$54.9 billion, reports the Department of Commerce. Private building expenditures advanced \$1.4 billion to \$39.1 billion rate, while public spending (federal, state, and local) increased \$1.5 billion to \$15.7 billion.



NEW PRODUCTS



N/D's new integrally sealed, heavy-duty conveyor ball bearing shuts out moist and dry abrasive contaminants . . . reduces assembly time and eliminates costly re-lubrication maintenance.

Introduces New Heavy-Duty Cost-Cutting Conveyor Ball Bearing!

Now you can cut conveyor operating and assembly costs substantially with the new heavy-duty N/D conveyor roll ball bearing.

This durable N/D precision ball bearing for conveyors incorporates an exclusive integral seal combination—a new, highly efficient Land-Riding Seal and a performance-proved Senti-Seal. Its minimum torque seal combination shuts out both moist and dry abrasive contaminants . . . and seals in bearing lubricant for life.

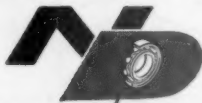
This high performance bearing helps cut manufacturing assembly time . . . and helps reduce field assembly costs. These modern design N/D ball bearings require no outmoded separate seal closures,

lubricant plumbing, adjusting nuts, springs or collars . . . they're virtually maintenance free!

N/D sealed ball bearings are interchangeable with other type bearings and mount directly on commercially available rolled shafting. Install a few in your conveyor section . . . then compare the reduced maintenance costs to other type bearings requiring constant relubrication. The results will be convincingly in favor of N/D integrally sealed ball bearings . . . year after year!

For additional information call your N/D Sales Engineer, or send today for the new N/D Heavy-Duty Conveyor Ball Bearing Bulletin. Write New Departure Div., General Motors Corp., Bristol, Conn.

Replacement ball bearings are available through United Motors System and its Authorized Bearing Distributors.



NEW DEPARTURE BALL BEARINGS

proved reliability you can build around

For More Information Write No. 159 on Inquiry Card—Page 32

Straws in the Trade Wind

► **WHAT'S THE PRICE OF . . .**—Every P.A. is occasionally confronted with the problem of finding the price of a commodity that he is not familiar with. Sometimes the job isn't easy; especially if the item is exotic. A new book, *Sources of Commodity Prices*, can simplify the job. It lists where price information can be found on 6800 items ranging from "A and D feeding oil" to "zytel." The book is available for \$5 from Special Libraries Association, 31 E. 10th St., New York 3, N.Y.

► **FIGHTING BACK**—Glass container manufacturers are boosting research to fight stiff competition from paper cartons, metal cans, and plastic containers. Under investigation are "no return" milk bottles, colored milk and beer bottles (other than brown and green) and lighter jars and bottles. Output of 23 billion bottles and jars is projected for this year—up 6% from the 1959 level.

► **THE ORGANIZATION MAN**—A recent survey by the research firm Opinion Research Corp. finds that the "organization man" is not the conformist commonly pictured in books and films. Regarding middle management executives—including purchasing agents—the

poll reveals that the typical "corporation rewards the man of daring and initiative, not the conformist. . . . The man who crashes through to get things done in spite of risks and obstacles is the valued individual."

► **BUSINESS HITS DEPRECIATION CHANGE**—Many business organizations have voiced their opposition to the Treasury's plan to change a depreciation ruling. The plan is to tax depreciated property that is sold at a higher price at ordinary rates instead of as capital gains.

► **COMPACTS FOR FLEETS**—Compact cars are taking a sizable share of auto sales for company fleets. Some firms have switched their entire fleets to compacts, while others are buying standard automobiles only for top executives. Already the Falcon accounts for close to 20% of the Ford division's fleet sales.

► **RECENT PRICE CUTS**—Among the recent price reductions announced by manufacturers are these: a 20% cut on secondary network capacitor equipment by General Electric; lower prices for welding equipment by Smith Welding Equipment Corporation; and cuts in prices of TFE fluorocarbon shapes by Polymer Corp.



W. C. Newberg

QUOTE!

Purchasing agents should support measures for depreciation tax reform to help business, says a top automotive executive. W. C. Newberg, executive vice president of Chrysler Corporation, says the federal tax policy on depreciation allowances for worn-out and obsolete equipment can "literally mean success or failure for American business, big and small, in its present battle for position in the world market." Says Mr. Newberg: "This need not be a partisan matter. Both parties are interested in American economic leadership in the world. Both parties are interested in the health of our competitive system and in the welfare of small business. This is an issue all businessmen can support—in their own self interest and in the interest of the nation as a whole."

"WE SAVE \$35 PER MAN...GET 4 WEEKS MORE WEAR WITH RIEDEL SURE GRIP* WORK GLOVES"



Riegel Roadmaster No. 70-6406 on the job at Fullerton Mfg. Co.

Here Are The Facts!

COMPANY: Fullerton Manufacturing Corp., Norwalk, Conn.

GLOVE PREVIOUSLY USED: Competitor's Special Grip

GLOVE NOW USED: Riegel Roadmaster™ Glove No. 70-6406, with exclusive non-skid Mighty-Dot™ palm, for safe, sure grip.

SAVINGS: "Riegel Roadmaster costs us 43% less than the glove previously used, and we get slightly longer wear. Result: We Save \$35.00 per man!"

COMFORT: "Our men prefer Riegel Roadmaster because it is more comfortable, absorbs perspiration, permits freer air circulation and has excellent gripping qualities."

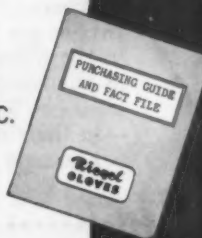
Here is another saving made possible because Riegel Industrial Analysts fit the right glove to the job. For help in reducing your glove cost, call or write Riegel today.

*Trademark "Roadmaster"

Riegel

Glove Div. • RIEGEL TEXTILE CORP. • Conover, N.C.

SALES OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES



Write for free
Glove Purchasing
Guide and Case
History File

For More Information Write No. 160 on Inquiry Card—Page 32

PURCHASING OPINION

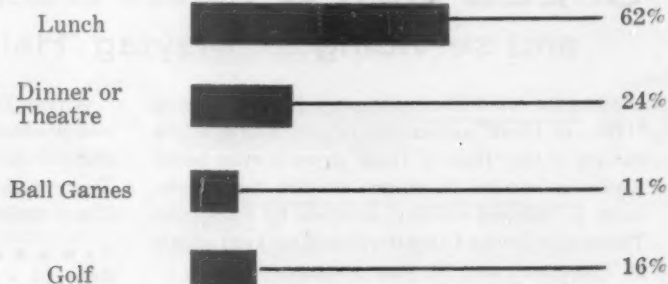
Personal Relations With Vendors

A certain amount of personal relationship is inevitable between purchasing agents and vendors who do business with each other. But what is the extent of this relationship? And what do P.A.'s think about outside social contacts with suppliers? To find out, we surveyed a representative group of purchasing executives. Their combined answers follow:

1. Have you noticed an increase in the past couple of years of vendors' efforts to provide entertainment for buyers?



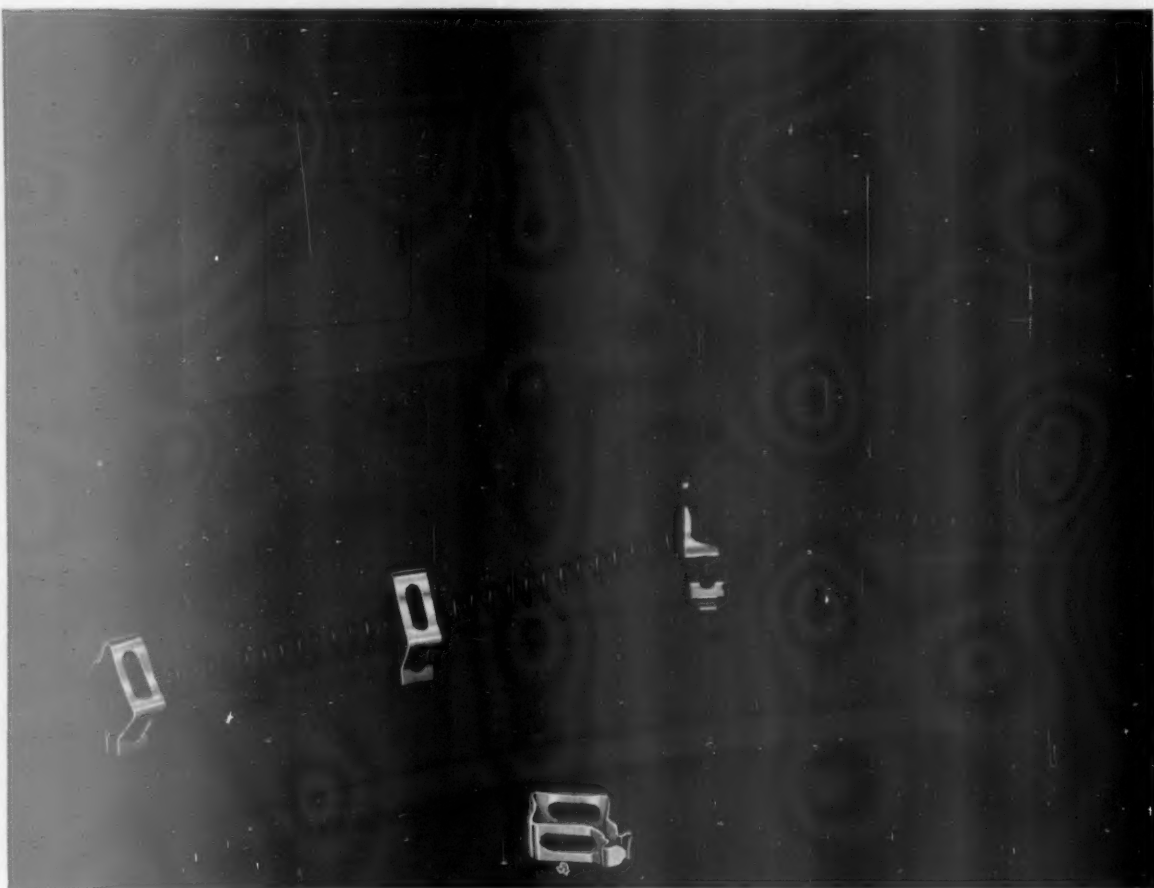
2. Do you regularly accept entertainment from vendors?



(total is more than 100% because some respondents checked more than one answer)

3. Have you put any limit on the amount of entertainment you or your buyers should accept from suppliers?





Engineered by Tinnerman...

SPEED CLIPS® reduce costs, simplify assembly and servicing on Maytag "Halo of Heat" Dryer

Clothes are dried efficiently in the famous Maytag "Halo of Heat" automatic dryer. And now the quality of the "Halo of Heat" dryer is even better than ever because its unique circular heating element is fastened quickly, securely by 22 special Tinnerman SPEED CLIPS developed by joint efforts of Tinnerman and Maytag designers.

Each one-piece SPEED CLIP eliminates a separate welding operation on the "Halo of Heat" assembly. Various screw-driving operations formerly required on Maytag's assembly line to capture the ceramic insulator and secure the mounting clamp were also eliminated, with equally interesting reductions in cost. Now, the stainless steel, vibration-proof fastener is snapped in place with simple "button-hook" action. No special skills or equipment are required. Assembly and parts costs have been reduced...*substantially!* Serviceability in the field has been improved.

A free Tinnerman Fastening Analysis of your own product can show you where similar assembly and cost-saving advantages are possible. Call your Tinnerman representative—he's listed in the Yellow Pages under "Fasteners". Or write to:

TINNERMAN PRODUCTS, INC.
Dept. 12 • P.O. Box 6688 • Cleveland 1, Ohio

TINNERMAN
Speed Nuts®



FASTEST THING IN FASTENINGS®

CANADA: Dominion Fasteners Ltd., Hamilton, Ontario. GREAT BRITAIN: Simmonds Accessories Ltd., Treforest, Wales. FRANCE: Simmonds S.A., 3 rue Solomon de Rothschild, Suresnes (Seine). GERMANY: Mecano-Buddy GmbH, Heidelberg.

For More Information Write No. 161 on Inquiry Card—Page 32

Purchasing Opinion

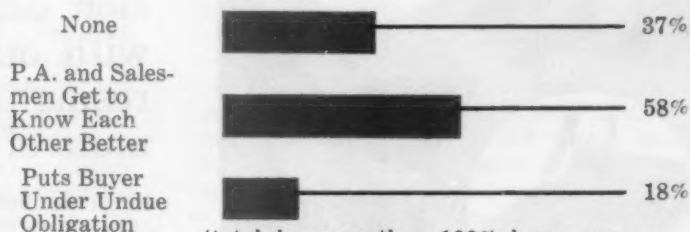
4. Is a certain amount of business generally transacted while you are being entertained?



5. Do you ever entertain suppliers at your company's expense?

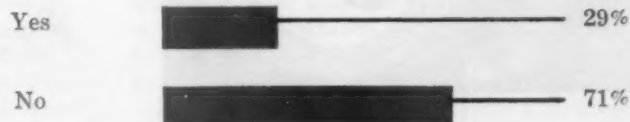


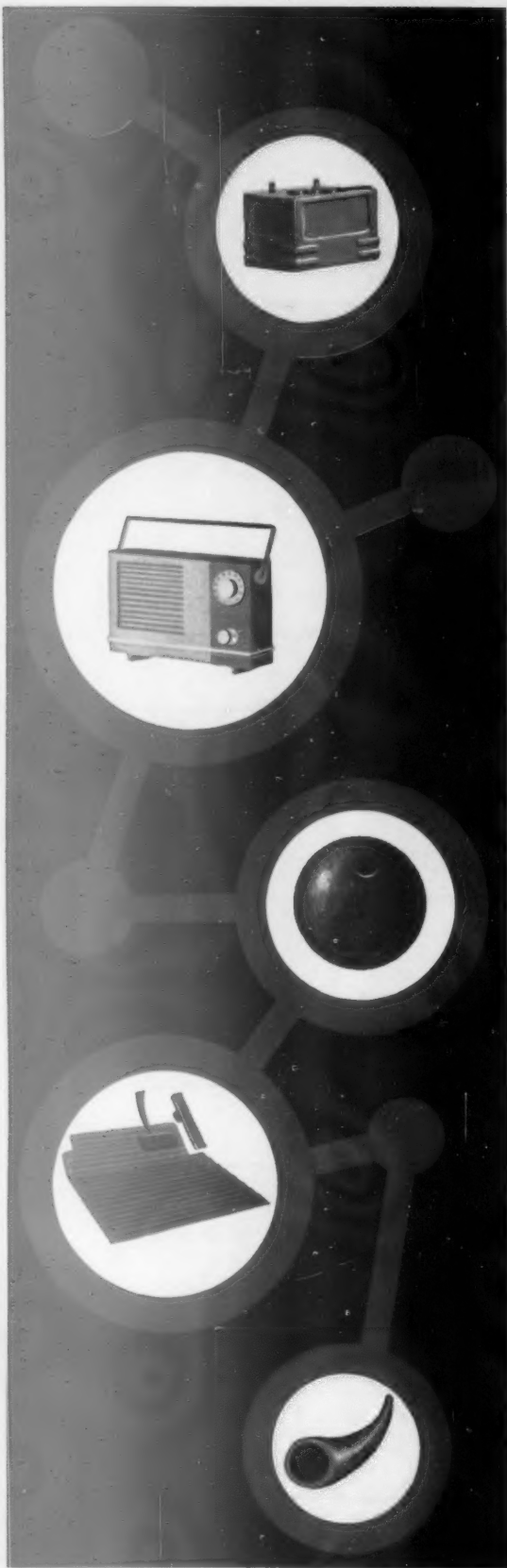
6. What effect (if any) does entertainment have on business negotiations?



(total is more than 100% because some respondents checked more than one answer)

7. Would you prefer that the practice be entirely eliminated?





ONE VERSATILE FR-S POLYMER MAKES GOOD IN MORE THAN 500 APPLICATIONS

Firestone's FR-S 1006 is a light-color, non-staining, easy-processing synthetic with a high pigment extension capacity. It weds well with other rubbers or with resins and requires a minimum of expensive pigments.

Firestone offers you the largest, most complete line of polymers available, plus specially trained Technicians to help you produce and market your products without obligation. Just write Firestone Technical Service, Dept. 24-2, Firestone Synthetic Rubber & Latex Co., Akron 1, Ohio.

Copyright 1960, The Firestone Tire & Rubber Co., Akron, Ohio

Firestone

SYNTHETIC RUBBER & LATEX CO.

AKRON 1, OHIO

MAKING THE BEST TODAY STILL BETTER TOMORROW





COPPER

YOU CAN STOP holding your breath, Mr. Copper Buyer.

After a lengthy period of uncertain supply that began early last August, P.A.'s can look forward to a 1960 copper market that will guarantee you all the metal you want to buy, and then some. Late in last month, the last of the recalcitrant unions came to terms with the big copper producers and the industry resumed normal production for the first time in six months.

It was the longest U.S. copper strike in history and its cost was over 300,000 tons of lost production and untold dollars in profits and wages. This was a period of frustration for purchasing agents who had to get their hands on enough material to keep their production lines humming—and who often had to pay premiums to get enough metal.

It's been an especially frustrating period since late November and early December. P.A.'s who thought their troubles were over found that resumption of copper operations was delayed or facilities were again shut down by one or more of the score of balky unions with which the industry has to deal.

Even with the lengthy strike in copper and the business slowdown brought on by the steel dispute, 1959 wasn't a bad year for the copper industry. U.S. mine output of 830,435 tons (the lowest since 1949) and refined production of 1,221,612 were under the corresponding figures of 979,323 and

1,446,540 tons for 1958. But a record first half in sales and output—plus heavy imports of copper in the second half—pulled U.S. consumption to 1,445,737 tons, the best since 1956 and substantially above the 1958 level of 1,250,677 tons.

1960 Outlook

Now what about 1960? Over the immediate future you can look for copper to be in tight supply throughout the rest of this month—possibly through the first half of April. It will take that long for producers to fill up pipelines that ran dry in the six months of idleness.

It's doubtful, though, that anyone will suffer too much in this period. Imports will be heavy and there will always be some material available from dealers, though you may have to pay a premium for it. Too, business hasn't been as good in 1960 as most prognosticators had thought, which has kept the copper shortage from turning into a fullscale drought.

Producers expect supply and demand to be pretty much in balance in the second quarter. After that over-production will again assert itself. This year look for U.S. refined production to hit around 1,415,000 tons and mine production to rise to about 1,100,000 tons. Domestic consumption should jump to about 1,550,000 tons.

It is doubtful that there will be a shortage of copper in the foreseeable future. Producers have

SPEEDICUT

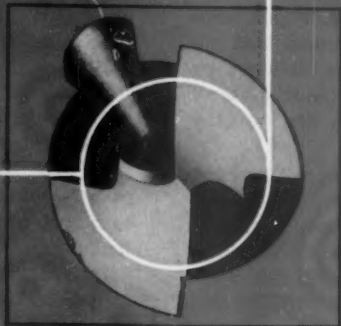
ONE HOLE FREE IN EVERY THREE

Because the new SPEEDICUT "CHIPBREAKER" operates at 50% to 400% higher feed rates, it drills at least three holes in the same time ordinarily required for only two with even the finest general purpose or heavy duty drill. And more holes per regrind means less down time and further savings in production costs.

See a demonstration in your own plant on your own equipment and type of work. Your local authorized SPEEDICUT "CHIPBREAKER" distributor will gladly arrange it. Write for literature and name of distributor.

THE PATENTED RIB
that cannot be duplicated

SPECIFY
SPEEDICUT "CHIPBREAKER"
SPEED WITH SAFETY



SPEEDICUT DIVISION, CHICAGO HEIGHTS STEEL CO. • CHICAGO HEIGHTS, ILL.

Special Industry Report:

purposely expanded capacity beyond demand to encourage usage and create new markets.

Just look at these figures: Free World mine capacity, at 3,883,000 tons in 1959, will rise to 3,957,000 tons this year and to 4,189,000 tons by 1962. And if announced expansion plans go through, this figure will be bumped to 4,329,000 tons within the next few years. Add to this the continuing exploration for new deposits that will undoubtedly be responsible for new facilities being brought in during the next decade. This means potential Free World excess capacity in the neighborhood of 200,000 tons a year—possibly as high as 290,000 tons by 1964.

No Higher Prices

In terms of price, this over-capacity is good news for P.A.'s. It probably means you will have to pay at least no more for copper in the foreseeable future than you are paying right now. In fact, the outlook for the bulk of 1960 is that you will be forking out somewhat less than the present price.

Chances are good that the primary price will stay right where it is until mid-year, then go lower in the second half as capacity increases. There may be some fluctuations both up and down during the second half, but predictions are the average price will be under present levels. The custom smelter quotation could go lower at any time.

It's unlikely that the price of copper will ever again get out of hand and go on a rampage. Producers are well aware that this over-capacity will be a mixed blessing. In order to get the benefits of guaranteeing consumers adequate supplies, they will have to pay the penalty at times of weaker prices.

Plenty of Copper . . .

As U.S. production goes up . . .

	mines	refineries
1958	979,323	1,446,540
1959	830,435	1,221,612
1960**	1,100,000	1,415,000

**Estimated

And Free World mine capacity rises

1959	3,883,000
1960	3,957,000
1962	4,189,000

all figures in tons

But producers are also well aware that fluctuations in the copper price has been the No. 1 complaint of users. And with the increased competition from aluminum and other materials, they know that any price rise in copper drives another nail into the coffin of some use for copper.

So if the desire to stabilize copper prices remains as strong as it is today, you can look for the producers to make more attempts to resist pressures on the U.S. market from overseas, to expand research and development activities, and to better coordinate production and consumption. Better coordination would probably mean some suspension of production when excess supply overhangs the world market and resumption of facilities when demand again begins to catch up with production.

The copper industry, however, is generally cheerful about its future. The growth in copper consumption traditionally follows the population curve, which is expected to spiral. Per capita consumption in the U.S. is a little under 15 pounds—it averages only about two pounds in the rest of the world. But as technology is boosted in other lands, as it has been in Western Europe recently, overseas per capita uses should climb sharply.

Consumption to Rise

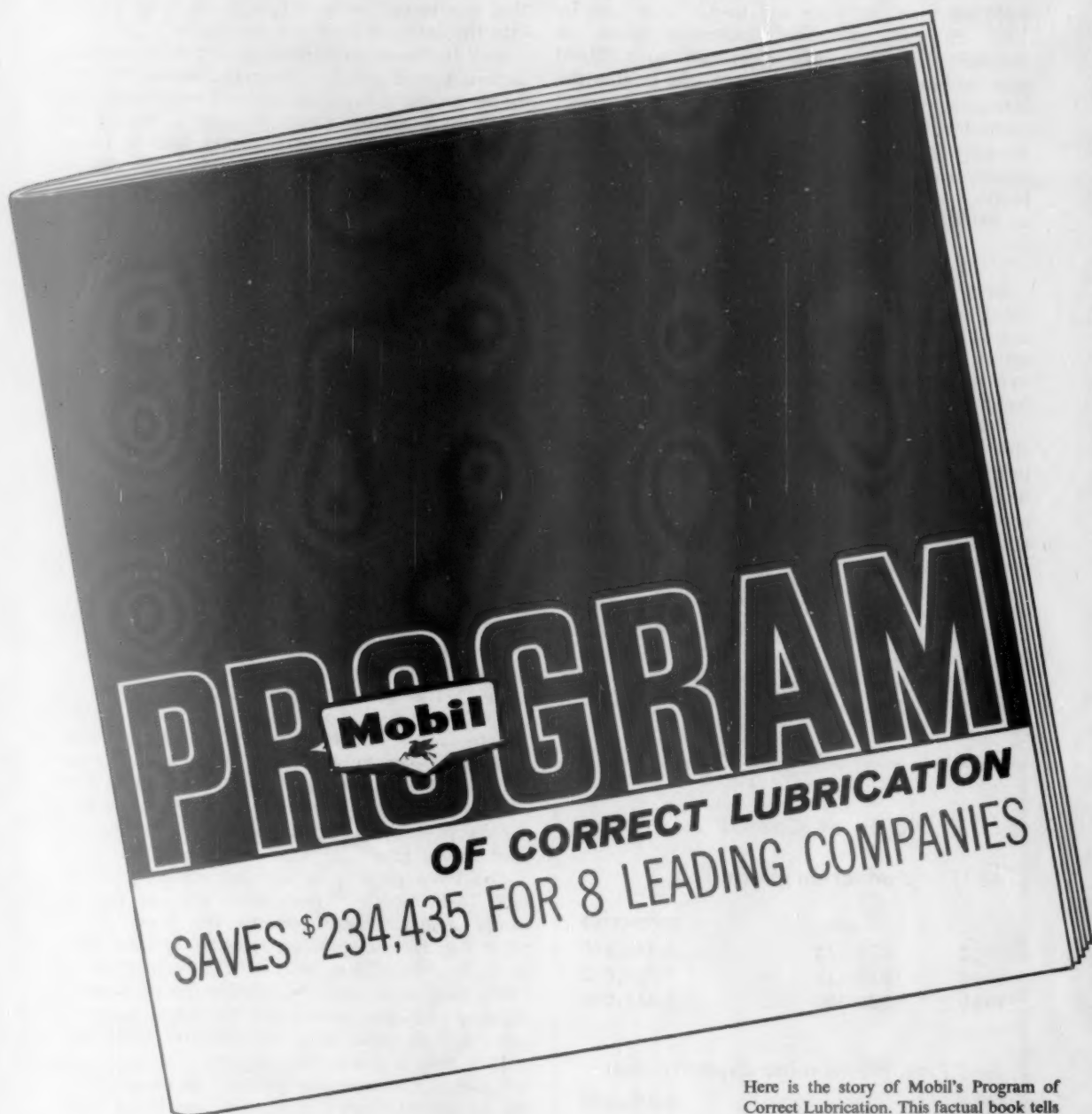
Throughout the 60's, copper consumption should grow at an annual rate of 3%-4%. U. S. growth is expected to average 2%-3%; growth in the rest of the free world from 4%-5%. The result: By the end of 1969, free world copper consumption should be 30% greater than it is today.

You probably won't see too much change in copper's traditional markets. Tubing for use in power generation and pipe for construction applications are the industry's fastest growing markets. Auto uses seem to have about stabilized, but electrical applications will continue to climb. Research and promotion activities have been on the increase for the past several years and look like they will continue to grow.

The labor picture looks stable for at least the next 15-18 months. That's when some of the recently signed contracts expire. But some of the other contracts negotiated recently by the large producers don't run out until the summer of 1962—good news since this means the next series of labor hassles won't involve the whole industry and wouldn't result in an industrywide shutdown.

This, then is the copper picture: over the next few years, you can look forward to an adequate copper supply, more stable price, and fewer troubles connected with purchasing your copper. You should have few problems obtaining all the copper you want this year, particularly from the second quarter on. Look for prices to dip during the year, probably in the second half.

NEW TOOL



Here is the story of Mobil's Program of Correct Lubrication. This factual book tells how Mobil saved money for others . . . could save money for your Company.

MOBIL OIL COMPANY,

PURCHASING

FOR P.A.'s...

Here's a 24-page book telling how the Mobil
Program of Correct Lubrication saved 8 leading
companies \$234,435. With this record of PROVED RESULTS
you can offer your management team a uniquely
effective approach to reducing maintenance costs!

The Mobil Program of Correct Lubrication is a *proved* method of reducing maintenance costs and eliminating production losses caused by machine downtime.

To help you discuss the Mobil Program with your Management, we have prepared a brochure which explains simply and straightforwardly what the Mobil Program *is*, how it *works*, and how it already has achieved *sizable savings* for some of the nation's leading companies. Savings, in fact, that in many cases exceed the total cost of petroleum products purchased from Mobil.

We suggest you distribute this book to your Plant Superintendent, Works Manager, or other key personnel. In addition, discuss it personally with your V.P. in charge of Manufacturing. It will demonstrate your interest in reducing costs through wise purchasing and, at the same time, it will introduce your people to a program that produces *results*.

We suggest you order your Mobil Program books immediately. Your books will be sent to you promptly, and any other assistance you might want will also be made available to you.



150 East 42nd Street, New York 17, N. Y.

Mobil Oil Company, Room 2060-C
150 East 42nd Street, New York 17, N. Y.

Please send me _____ copies of the Mobil Program of Correct Lubrication book. (We ask that each request be limited to 5 copies.)

NAME _____

TITLE _____

COMPANY NAME _____

COMPANY ADDRESS _____

CITY _____ STATE _____

For More Information Write No. 164 on Inquiry Card—Page 32

MARCH 14, 1960

19

Ammonia from Armour is



PURE!

Armour Anhydrous Ammonia has a guaranteed minimum purity of 99.98%. Ammonia so pure, you have no problems with moisture, oil or non-condensable gases.

You are always assured of excellent heat treating results, because Armour quality standards are based on an extra control test made when the ammonia is ready for shipment to you. *Every* cylinder and tank truck of Armour Ammonia is subjected to a rigid qualitative test after filling to make sure it is at least 99.98% pure *when delivered* to you. This extra Armour test eliminates the danger of your receiving ammonia that has been contaminated during the filling process.

Armour Ammonia is also backed by the finest technical service available. Armour's Technical Service Department will furnish blue-prints and engineering recommendations . . . supervise your cylinder and storage tank installations and give additional aid whenever you need it, at *no extra cost*.

Ammonia Sales



Armour Industrial Chemical Company

Division of Armour and Company
110 North Wacker Drive • Chicago 6, Illinois

For More Information Write No. 165 on Inquiry Card—Page 32

Wholesale Prices Will Be Stable Through 1960

THE BUREAU of Labor Statistics sees wholesale prices remaining stable for the rest of this year. With the boom somewhat deflated in the last month or two, there will be little pressure for higher prices.

In steel, where the wage settlement immediately raised the problem of higher costs, the outlook is for a cautious approach toward prices. Some selective product price increases are held likely toward the end of the year.

Steel industry expects that its operating rate will drop in the second quarter, and again in the third. This will, of course, increase the unit cost of producing steel.

At the same time, some of the increased costs that the steel industry had expected—higher ore and increased transportation charges—have not yet appeared. In addition, scrap prices have fallen, which will tend to offset a small portion of the higher costs of steel-making.

In nonferrous metals, prices firmed up during the strike—but have since softened. For the months ahead, the supply outlook would tend to keep prices low.

Thus some price increases could develop toward the end of the year, but no general rise is now expected. The pattern for the year will be much like that of last year, with lower farm and food prices and somewhat higher industrial prices.

In the food and farm sector, however, prices are expected to stabilize this summer. If food prices firm up, any increases in industrial price levels would



The head of the President's Council of Economic Advisors, Dr. Raymond J. Saulnier, is urging greater cooperation between business and government for contained economic growth.

quickly be reflected in the cost of living index—since the higher prices for goods and services have been partially compensated for until now by lower food prices.

• Gov't. Growth Policies Stir Controversies

The growth rate of the economy continues to be a source of controversy, with many leaders here making dire predictions that the Soviets can and will outdistance us.

While it is accepted as fact that the growth rate in Russia is much higher than in the U.S. (estimates of Russian growth range from 6 to 9% each year), many wonder whether this is not due to the

large unfulfilled needs of the Soviet economy.

Over the last 50 years, the average growth rate in this country has been 3% a year. During the next 15 years, the growth rate is expected to be much higher—based on the assumption that there will be no depressions (The depression years 1929 to 1941 brought down the U.S. average considerably).

Economic Projections

A recent staff study by the Congressional Joint Economic Committee made a series of economic projections. Analysts here note these implications in the report:

(1) Without basically changing our economic system—no elaborate controls or a government imposed rate of growth—the economy can grow at a rate as high as 4.6% each year. On the other hand, it would be extremely difficult to achieve higher growth rates within our economic system.

(2) Even if we avoid a deep depression, our growth rate could still be as little as 3.5% a year.

(3) If unemployment can be held to 4% of the civilian labor force, or less, there will be a moderate inherent tendency for the growth rate to rise during the next decade.

(4) If government policies encourage growth the economy will expand near the upper limit (4.6%). If the government does not, the economy will perform sluggishly.

(5) In recent years, including 1960, output of the economy has

ANOTHER **LYON** PRODUCT →

VERSATILE
LOW COST

SLOTTED ANGLE

SO EASY TO USE

STORE IT?
STACK IT?
RACK IT?
CART IT?

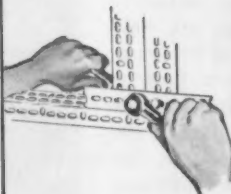
①
PROBLEM?



②
PLAN



③
CUT



④
ASSEMBLE

Remember the erector set you enjoyed as a kid—all the different things you made—ladders, bridges, carts, windmills and dozens of others?

Lyon Slotted Angle brings you that same versatility and simplicity in slotted lengths of cold rolled steel angles—with heavy galvanized finish—ready to handle an endless list of man-sized jobs!

You don't need an engineering degree to use Slotted Angle. Just make a rough sketch, indicating the length of each part you need. Cutting angles to size is a breeze because there's a guide mark every 3 inches. A couple of wrenches is all you need for easy, on-the-site assembly.

Catalog #180 tells the complete story. Drop us a note and your copy will be on its way, pronto.

LYON METAL PRODUCTS, INC.

General Office: 333 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

Write for Slotted Angle Catalog #180. Or see your Lyon Dealer for delivery from stock of the world's most diversified line of steel equipment.



LYON

STEEL EQUIPMENT

A PARTIAL LIST OF LYON PRODUCTS

- | | | | | | | | |
|-----------|---------------------|--------------|------------------|-----------------|---------------|--------------------|------------------------|
| • Desks | • Storage Cabinets | • Bookcases | • Folding Chairs | • Sorting Files | • Tool Stands | • Cabinet Benches | • Display Equipment |
| • Tables | • Flat Drawer Files | • Coat Racks | • Service Carts | • Hopper Bins | • Tool Boxes | • Revolving Bins | • Hanging Cabinets |
| • Stools | • Drawing Tables | • Shelving | • Work Benches | • Drawer Units | • Parts Cases | • Toolroom Equip. | • Slotted Angle |
| • Lockers | • Filing Cabinets | • Bin Units | • Bench Drawers | • Shop Boxes | • Bar Racks | • Service Counters | • Wood Working Benches |

For More Information Write No. 166 on Inquiry Card—Page 32

Washington Report

been well below its potential. This will continue into the 1970s, especially if the growth rate follows along the 3.5% average.

Specifically, what the study paper suggests is this: unless the government takes active steps to encourage the nation's industrial rate of growth, the economy will operate considerably below its potential.

● GSA Issues Uniform Buying Regulations

The federal government has issued a uniform set of regulations applying to formal advertised bidding and contract procedure, effective July 1.

The General Services Administration, through its Office of Procurement Policy, has worked out uniform language for contracts and regulations with the concurrence of all other government agencies. The regulations cover all procurement exclusive of real estate.

No Basic Change

The Department of Defense is making modifications in its chapter of the Armed Services Procurement Regulations (ASPR) to bring it into line with these uniform regulations applying to the civilian agencies.

No basic change in buying policy or procedure is involved, as all the agencies have been following buying practices in accordance with rulings of the Comptroller General. The uniform regulations do, however, represent refinements in language and practice—and will make it possible for any government supplier to obtain in one document the policies and regulations which will govern buying by every agency.

The new rules are part of the Federal Procurement Regulations, which may be ordered from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. Price is \$2.25 for a one-year subscription. They will also be issued

singly as Circular No. 6 of the FPR series.

● Contractors Attack Missile, Space Buying

The nature of military missile and space hardware procurement has raised some major problems in the chain of supply.

Spokesmen for various classes of suppliers are urging changes in the government's approach to purchasing the highly technical products that go into the military arsenal and space vehicles.

Nelson P. Jackson of Joy Manufacturing Company — whose products are used in missiles, ground support equipment, aircraft, and submarines—testified before a Congressional space committee that government procurement policies are destroying initiative and discouraging companies from undertaking contracts.

Practices to which he objected were:

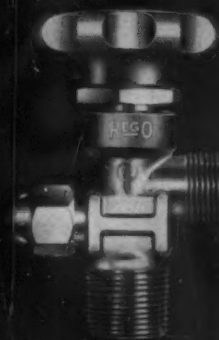
- (1) Tight procurement.
- (2) Multiple audits by various government agencies.
- (3) Government ownership of patents developed in the course of space investigation.
- (4) Renegotiation.
- (5) The acquisition by government of proprietary technical data and know-how that is basically private company property.

Speaking for a medium-sized company in the space missile industry, Norman Schaffer of Consolidated Diesel Electric Corporation, pointed out that he had no major quarrel with the buying methods of prime contractors in the space field. But he suggested that some accommodation to the problems of the subcontractor be made.

Addressing a meeting of the National Rocket Club in Washington, Schaffer made these two suggestions:

"We would like to see the prime contractors firm up their 'make or buy' decisions before requesting proposals from prospective

LOOKING FOR THE BEST BUY IN VALVES?



REGO

850 SERIES CYLINDER VALVES
*for efficient, economical
control of gases*

- **THOROUGHLY FIELD-PROVEN**
Thousands in use under all conditions
- **THOROUGHLY SAFE**
Safety devices for every rating and application
- **DOUBLE SAVINGS!**
Save on cost of valve—
save on shipping charges:
20% lighter than old-style valves
- **LONGER, MAINTENANCE-FREE LIFE**
Nylon packing; automatic take-up
never needs adjustment

Do you order cylinders complete with valves? Specify Rego and SAVE!

MAIL COUPON NOW FOR FAST REPLY:

RegO Division, Dept. 26-C
The Bastian-Blossing Company
4201 W. Peterson Ave., Chicago 46, Ill.

Please send us free information about:

- ☐ the 850 Series Valves
- ☐ RegO Valve Customizing Service
(Your name or trademark embossed on valve body.)
- ☐ RegO Engineering Advisory Service
for purchasing executives

Name _____

Company _____

Address _____

City _____

Zone _____

State _____

For More Information Write No. 167
on Inquiry Card—Page 32



puts every other
cargo schedule
in the shade!

New Pan Am Jets cut world-wide delivery time 40%!

Pan Am opens up with the most complete Jet cargo schedules of any line today. With more new Jets, Pan Am brings almost every major city in the world within 12 hours of the U.S.A.

For instance:

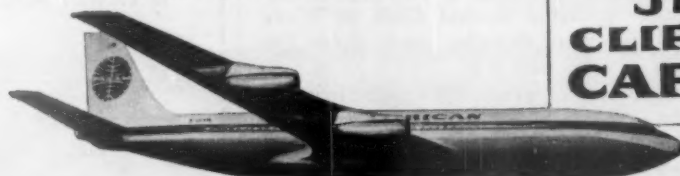
Caracas from New York.....now 4½ hrs.
Amsterdam from New York....now 8½ hrs.
Honolulu from San Francisco..now 5¼ hrs.
London from Los Angeles....now 11½ hrs.

Pan Am Jet Clipper* Cargo gives you these exclusives, too: MORE SPACE (10,000 pounds capacity with every new Jet plane!) • MORE JETS • MORE FLIGHTS • MORE SHIPPING

POINTS FROM THE U.S. • MORE SERVICE (From electronically checked reservations to doorstep pickup and delivery, your goods are in the hands of the most careful and experienced men in the business.) *No wonder Pan Am carries nearly twice as much international air cargo as any other carrier!*

Take advantage of Pan Am's faster, better service now. Call your cargo agent, freight forwarder or Pan Am direct. Get your shipment *aboard today—abroad tomorrow!*

via the WORLD'S MOST EXPERIENCED AIRLINE



*Trade Mark, Reg. U.S. Pat. Off.

For More Information Write No. 168 on Inquiry Card—Page 32

Washington Report

suppliers. If the prime contractor is not positive whether the part will be made or bought, or if the whole program is not fixed, perhaps less elaborate proposals can be utilized and the bidder can be advised so that he can properly evaluate the amount of effort that goes into his proposal. We think there have been too many cases where very detailed and costly proposals have been submitted to prime contractors when the program is later altered or the prime contractor elects to build the item himself.

Better Methods

"Perhaps better methods can be developed to advise industry of the requirements of weapons system managers. Smaller companies such as ours cannot afford the tremendously large sales organizations required to visit all the prime contractors and become so well acquainted with the purchasing, sales, and engineering departments of each of these prime contractors so as to be aware of all the weapons system contractors' needs. We have therefore been faced with the decision to either concentrate on a few weapons system contractors and cover these areas thoroughly, or try to cover all weapons system contractors partially.

"In either case, we are aware of only a small portion of the requirements that exist with weapons system contractors for our skills, and, conversely, the majority of weapons system contractors may not be aware of the contributions we could make on particular problems. Better publicity on the weapons system contractors' needs would result in the possibility of uncovering better solutions to his problems. It also would help the subcontractor by giving him a larger number of bids from which he could choose, and thus concentrate on those areas in which he has the most skill. Perhaps a system of posting requirements would be the answer to this problem."—A. N. Wecksler

Life in these excited states...



"So you've got some leaks... look, new pipe costs money!"

Troubles coming in waves? Try Ace-Ite pipe

Ace-Ite Plastic Pipe... a tough, chemical-resistant ABS rubber-resin blend... is the surest way to stem the tide of corrosion. One of eight types of Ace pipe, it's ideal for general use, handles most chemicals. It's been around long enough so we know what it'll do. And you'll like the price. Ask for Bulletin CE-80.

Ace chemical-resistant rubber-lined steel pipe best for high-pressure, big sizes, or abrasives. Pipe, fittings and valves 1½ to 24".

STRENGTH OF STEEL

Highly efficient W/E pump. Capacity to 360 gpm. Cast iron, fully protected by top quality, chemical resistant hard rubber lining.

BIG GIANT OF ACID PUMPS

Design assistance and facilities for molding special fittings, pump parts, etc., of plastics or hard rubber. Also large hand-fabricating facilities.

CUSTOM MOLDED OR HAND BUILT?

Variety and quality to match any plastic piping. Riviclor PVC, Ace-Ite rubber-plastic, Parian poly, Ace Saran, Tempron high temperature nitrile, hard rubber-lined steel.

Supermarket for PLASTIC FITTINGS

ACE

processing equipment of rubber and plastics

AMERICAN HARD RUBBER COMPANY
DIVISION OF AMERACE CORPORATION
Ace Road • Butler, New Jersey



See our pages in
cee
Catalog!

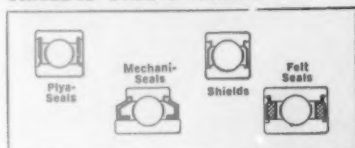
Bearing Buying Guide

NO. 5



A REPORT ON FAFNIR BEARING DEVELOPMENTS AND DISTRIBUTION ACTIVITIES

"BEARING KILLERS" KEPT AT BAY WITH FAFNIR SEALED, SHIELDED BALL BEARINGS



Dirt, dust, chaff, moisture, fumes — there are Fafnir ball bearings with built-in protection against virtually any "bearing killer".

Contact type Plya-Seals offer the best protection yet against contaminants at slow-to-moderate speeds. Shields and labyrinth type Mechani-Seals are for higher speeds. Felt seals are choice for less severe conditions. All are available with one seal or two seals, or in combinations to meet specific needs.

FAFNIR'S "TRIPLETS"



Each of these Fafnir ball bearing pillow blocks is built for standard duty. Each is available with the same seals. The difference? Base-to-center-height dimensions, and bolt-hole spacings . . . to meet most design specifications. Another example of how Fafnir meets the diverse needs of bearing buyers!

FAFNIR "W O" TYPE BEARINGS FOR HIGHEST SPEED SPINDLES

"W O" type bearings are super-precision bearings employing counterbored inner rings and outer ring land riding retainers. The reason for this construction is that at the terrifically high speeds for which this bearing is intended, centrifugal force pushes balls and lubricant toward outer race. Because counterbore is on the inner race, symmetrical lands of outer race afford full support for balls as well as reservoir for lubricant. Maximum ball complement maintains a high degree of rigidity. The bearing is large enough to provide the same spindle nose diameter as for spindles having the ball raceway integral with the shaft. Counterbored inner ring construction permits immediate entry of oil-jet or oil-mist lubrication to inner raceway.

FAFNIR METALLURGICAL INSPECTION TECHNIQUES INSURE QUALITY OF BALL BEARING STEELS

Because of today's high bearing loads and stresses, metallurgists have established stricter quality standards for the steel that goes into ball bearings. In fact, steels today have been improved so much in quality that hitherto existing methods of inspection are becoming inadequate.

To obtain steel that will withstand the high loads and repeated stressings, metallurgists have established exacting specifications for cleanliness and uniformity. In checking steel for micro-cleanliness, Fafnir metallurgists work with specimens that are hardened, polished and examined in their unetched condition with a metallurgical microscope at 100X magnification. These are compared to the Jernkontoret Chart* for size of nonmetallic inclusion. The results determine the "J-K" rating of the steel.

Other techniques used at Fafnir for determining cleanliness are deep acid etching, fracturing of hardened discs and magnetic particle inspection. Ultrasonic testing now permits scrutinization not only of samples, but also of every bit of steel that goes into a ball bearing.



Fafnir metallurgist examines sample of ball bearing steel for micro-nonmetallics at 100X magnification.

With ball bearing requirements becoming more demanding as new highs are sought in load levels, speeds, temperatures, corrosion resistance and miniaturization, Fafnir metallurgists and steel producers are working together on further refinements in inspection methods. Individual customer specifications, too, have contributed greatly to the effort of raising inspection standards for steel.

*A standards chart of the American Society for Testing Materials

NEW FACILITIES...CHICAGO BRANCH OFFICE AND WAREHOUSE

Office and Warehouse are now located at 4640 North Olcott Ave., Telephone Number Underhill 7-8785. The move to more spacious, more convenient facilities is the latest of several made by Fafnir branch offices and warehouses in the The Fafnir Chicago Branch past few years . . . all in the interests of better customer service.

It reflects increased demand for Fafnir products.



FAFNIR DISTRIBUTION NETWORK . . . 26 Branch Offices, 18 Warehouses . . . and for replacement bearings, over 1000 authorized distributors throughout the country.

Branch Offices: Atlanta* • Baltimore • Boston (Cambridge)* • Charlotte* • Chicago* Cincinnati • Cleveland • Dallas* • Denver* Detroit* • Houston • Indianapolis • Kansas City* • Los Angeles • Memphis* • Milwaukee Minneapolis* • Moline • New Orleans (Metairie) New York (Woodside)* • Philadelphia* Pittsburgh* • Portland, Ore.* • Rochester San Francisco (Millbrae)* • Seattle* •

*Includes warehouses

FAFNIR

BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

For More Information Write No. 170 on Inquiry Card—Page 32

Purchasing Follow-up

Jan. Business Failures New Incorporations Up

Although business failures rose 9% in January from the previous month, new business incorporations also increased appreciably.

While the upturn in business failures—to 1181—was smaller than the usual seasonal increase, it was the highest since June 1959. But the 1960 figure remained below the level set in January 1959 and 1958.

Failures climbed noticeably among construction contractors and retailers. Manufacturing and wholesaling failures declined. Wholesaling failures were at a seven month low, with the downturn largely in the machinery industry.

In the Middle Atlantic states, failures reached a nine-month high, while the Pacific states' toll fell to an eleven-month low. Seven out of nine regions had a lighter mortality than a year ago.

New incorporations rose 10.5% in January to 18,189. But this was still 3.5% lower than the January 1959 all-time record of 18,842.

New stock corporations rose in six of the nine regions. The declines occurred in the New England, West Central, and Mountain states.

Automobile Output Tops 659,000 Cars in Feb.

Automobile production last month totaled 659,303 cars—the best February since the record set in 1955.

Output was 38% ahead of February 1958, when 478,518 cars were built. However, the February figure was still 4% below the 688,756 automobiles assembled in the previous month. And the automobile production rate—which slowed from 32,800 cars a day at the beginning of February to 30,700 cars a day the last week—is still declining.

First quarter output is now ex-

pected to be more than 1,900,000 cars, with over 550,000 cars slated to be built this month. The only previous first quarter to top this was 1955, when more than 2,100,000 autos were built. Earlier, a number of industry leaders had predicted first quarter production of 2,250,000 cars in the first quarter of 1960.

General Motors Leads

General Motors Corporation led the production parade in February with close to 50% of the total cars turned out. Ford Motor Company was second with about 26%

and Chrysler Corporation followed with almost 17%. American Motors Corporation produced around 6% of the total, while Studebaker-Packard Corporation built 2%.

In February 1959, General Motors also led with around 54% of all auto production, with Ford again second with about 31%. However, last February, American Motors was third—by producing 6.3% of the total. Chrysler followed close behind with 5.5%. Last place was held by Studebaker-Packard with production of 3.5%.
(Turn Page)

'P.A. Should Manage Materials'

OF ALL DEPARTMENT heads, the purchasing agent is best qualified to manage materials, Paul V. Farrell, editor of PURCHASING Magazine, told a group of paper industry buying executives recently.

"There's nothing inevitable about the development of materials management as a separate function," Farrell told the Materials Committee of the American Paper and Pulp Association. "Many companies will adopt the concept if it fits into their organizations. Others have already found it cumbersome and next to useless. But if it's in the cards for your company, you should be the logical choice to head the materials department."

The logic of the P.A.'s position, Farrell warned, doesn't guarantee that he will get the position automatically. The purchasing must show a superior knowledge of the many aspects of the materials function, he said. These include, according to Farrell, stores and inventory control, traffic, receiving inspection, expediting, and, in some cases, material handling.

He referred to a previous speak-



Paul V. Farrell

er, Donald S. Adams, manager, materials department, Ohio Division, Champion Paper & Fibre Co., who had said: "I think materials management is a sound system for the paper industry. I think it's here to stay. It doesn't make much difference who is in charge of it—the purchasing agent included—as long as he is competent to do the job."

"There is your challenge," Farrell warned the purchasing agents.



It's V-ring packing of TFE resins and \$345 in savings per year per valve!

A man in the purchasing department of a paper mill found that specifying valve packing of Du Pont TEFLON TFE resins makes a welcome difference in over-all costs. The mill had encountered serious problems in packing valve stems in corrosive white, green and black liquor service. Liquor was being lost; frequent changes of packing and periodic adjustments were required; and cleaning and maintenance costs were high. The mill switched to V-ring packing of TFE resins—and reports savings of \$345 per year per valve through the elimination of frequent changes, adjustments and liquor losses. In addition, the use of packing of TFE resins has sharply reduced wear on valve stems.

The outstanding properties of TFE resins—toughness, virtually complete chemical inertness, resistance to temperature

extremes, low friction without lubrication—have led to their specification as sealing and gasketing materials, even when service demands are not exceptionally rugged. The use of TFE resins permits full standardization . . . provides extra safety, reliability, longer life and fewer maintenance problems.

Conclusion: If you feel that such considerations as these make a difference in *your* operation, it will pay you to find out more about the engineering properties of TEFLON TFE resins in sealing applications. For more information, write to: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Dept. T-50314, Room 2526, Nemours Building, Wilmington 98, Delaware.

In Canada: Du Pont of Canada Limited, P.O. Box 660, Montreal, Quebec.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

TEFLON
TFE-FLUOROCARBON RESINS

TEFLON is Du Pont's registered trademark for its family of fluorocarbon resins, including TFE (tetrafluoroethylene) resins and FEP (fluorinated ethylene propylene) resins.

For More Information Write No. 171 on Inquiry Card—Page 32

Purchasing Follow-up

Labor, State Comm. Hit New York City Buying

New York City's Commissioner of Purchase, Joseph V. Spagna, is under fire on two fronts.

On one side, Spagna has been urged by the city Central Labor Council not to buy from any contractor who pays wages less than \$1.25 an hour. And on the other, he was questioned for five hours by the state Commission on Governmental Operations of the City of New York.



TROUBLES FOR SPAGNA—New York City's Commissioner of Purchase, Joseph V. Spagna, is finding additional pressures on his buying job for the nation's largest city. The city Central Labor Council seeks to prevent Spagna from buying from any supplier who pays less than \$1.25 an hour; while the New York State Commission on Governmental Operations of the City of New York questioned him on his department's policies.

The suggestion to add another factor—in addition to quality, delivery, and price—to the city's buying decisions was made by organized labor's principal spokesman in the city. Harry Van Arsdale, Jr., president of the one million member Labor Council, contends that it is the responsibility of the city to protect workers earning below \$1.25 an hour from "exploitation."

"We recommend that the city should not make tax money available to anyone paying less than \$1.25 an hour. This includes museums, hospitals, and other non-profit institutions, as well as business concerns who sell goods and services to the city."

Spagna's appearance before the state commission at a private hearing had not been announced before his arrival. He said afterwards that the commission had not questioned him about either purchases or prices.

Spagna declared that his organization is "the most highly efficient department in the city and the country." He said there had been no allegations of wrongdoing during the questioning, but he added that he was "open to any suggestion" for improvement.

The Purchase Commissioner said that the commission was looking into "how the City of New York could operate a little better."

Navy Spurs Drive on Late Shipments by Vendors

The Navy Department is stepping up its drive against late deliveries of material purchased from suppliers.

Purchasing officers in the Bureau of Supplies and Accounts, are pressing to insure prompt and punctual contract delivery dates. It is part of a program to reduce dollar investment in material without reducing defense readiness. Presently the Navy has \$12 billion worth of inventories of stores type material (excluding ships, aircraft, and other capital items).

Navy purchasing officials are also seeking new ways to reduce the number of days in the procurement cycle. Efforts to cut lead time, especially for stock items, are increasing sharply not only in the Navy, but in the entire Department of Defense.

In fiscal 1959, major purchasing groups of the Navy Supply System placed a half-million contracts and purchase orders. Expediting late deliveries of these

"I get all my charts with just one order!"



"I used to have to buy recording charts from about as many different companies as we had instruments in the plant. Not now—not with that new GC Recording Chart one-order service!"

You, too, will benefit from GC's "one-order service". You'll save time and money and paperwork when you make out just one purchase order for all your company's chart needs.

Only GC keeps more than 15,000 different types of circular, strip and rectangular charts constantly in stock. Our ready-to-ship inventory averages some 8,100,000 items, all produced under controlled-humidity conditions and kept current by GC's own electronic data processors.

GC will help with your stock room problems, too. Order charts in long-term quantities, for example, and be assured that we will ship the charts with the exact regularity you specify.

Ease of ordering, uniformly high quality, economy of costs—GC offers all these. Ask for our Stock List—and for samples.



DISTRIBUTED BY:

TECHNICAL SALES CORPORATION

189 Van Rensselaer St., Buffalo 10, N. Y.

A SUBSIDIARY OF:

GRAPHIC CONTROLS CORPORATION

Buffalo 10, New York

For More Information Write No. 172 on Inquiry Card—Page 32

You get

4

big advantages with all

4

CLEVELAND New Style COUNTERSINKS



HIGH
SPEED STEEL
Lit. No. 771

CARBIDE
TIPPED
Lit. No. 772

SINGLE FLUTE

The high performance and single flute construction allows countersink holes and chamfers tapered over a wide range of speeds and feeds. Suggested use: countersinking on pre-formed holes that are too small for a double countersink.



HIGH
SPEED STEEL
Lit. No. 773

CARBIDE
TIPPED
Lit. No. 774

THREE FLUTE

Especially useful in portable work, because they remove metal rapidly. Designed to give chatter-free performance in both countersinking and deburring operations. Gives better tool life in most applications.

- ① Easy feeding
- ② Long tool life
- ③ Burr-free holes
- ④ Better finish

Many tests in customers' plants have proved that the newly designed CLEVELAND New Style Countersinks give outstanding performance in all materials . . . on both machine and portable equipment . . . and operate without chatter over a wider range of speeds and feeds than ever before possible.

The High Speed New Style Countersinks (Single Flute and Three Flute) are available in body diameters of $\frac{1}{4}$ " to $1\frac{1}{2}$ ", with included angles of 60°, 82°, 90°, 100°, 110° and 120° for sizes up to 1", and angles of 60° and 82° for the $1\frac{1}{2}$ " size.

The Carbide Tipped New Style Countersinks (Single Flute and Three Flute) come in body diameters of $\frac{1}{4}$ " to 1", with included angles of 60° and 82°.



Write for your copy of this Helpful New Folder

Gives recommendations for countersinking holes in various materials, in both portable and machine work. Illustrates methods of regrinding. Lists the sizes and point angles of the new Countersinks.

TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR
for CLEVELAND Quality Tools . . . prompt delivery from stock



THE CLEVELAND TWIST DRILL CO.
1242 East 49th Street • Cleveland 14, Ohio

Stockrooms: New York • Atlanta • Cleveland • Detroit • Chicago • Dallas • Los Angeles • San Francisco

Purchasing Follow-up

orders presents a major administrative burden to Navy employees.

The Navy has issued a new Procurement Directive designed to overcome the problem. It spells out the procedures of reporting on contractor performance and delinquency. Records of consistent delinquency on delivery dates will be considered by contracting officers before awarding new contracts to vendors.

New Record Set for Collapsible Tube Sales

Sales of collapsible metal tubes hit a new record in 1959 when 1,150,013,808 tubes were produced.

This marks a 14% gain over the previous year, reports the Collapsible Tube Manufacturers Council. Increases were noted in most end uses, with major gains in tubes for cosmetics and pharmaceutical and medical preparations.

The largest traditional users of squeezable metal tubes are toothpaste manufacturers. These companies used 581,168,592 of the units produced last year, an increase of 13% over 1958.

Over 25 million pounds of metal were used by the manufacturers in 1959 to produce the tubes. Included were 14,373,825 pounds of lead, 9,891,168 pounds of aluminum, and 1,506,992 pounds of tin.

Welding Supply Volume Advances 17% in 1959

Welding supply volume advanced 17% in 1959 over the previous year, says the National Welding Supply Association.

The association—which has 218 distributor members—also reports that its members' fourth quarter sales increased 12% compared to the similar period of 1958.

In the fourth quarter, the Eastern Zone had a 12% increase, the Southeastern Zone advanced 15%, the Central Zone rose 13%, and the West Central Zone had a 12% hike. Both the Southwestern and Western Zones reported increases of 11%.



*You'll find the Quality line at
the SEALMASTER sign!*

Backed by a quality reputation attained by SEALMASTER Bearings over the years and a complete line of quality bearing units in a wide range of sizes and styles of mountings, your Sealmaster Distributor is best equipped to give you top service on all your bearing requirements. The SEALMASTER line of cast iron units, malleable iron units, rubber lined units and cartridge units, incorporate engineering features exclusive with SEALMASTER.

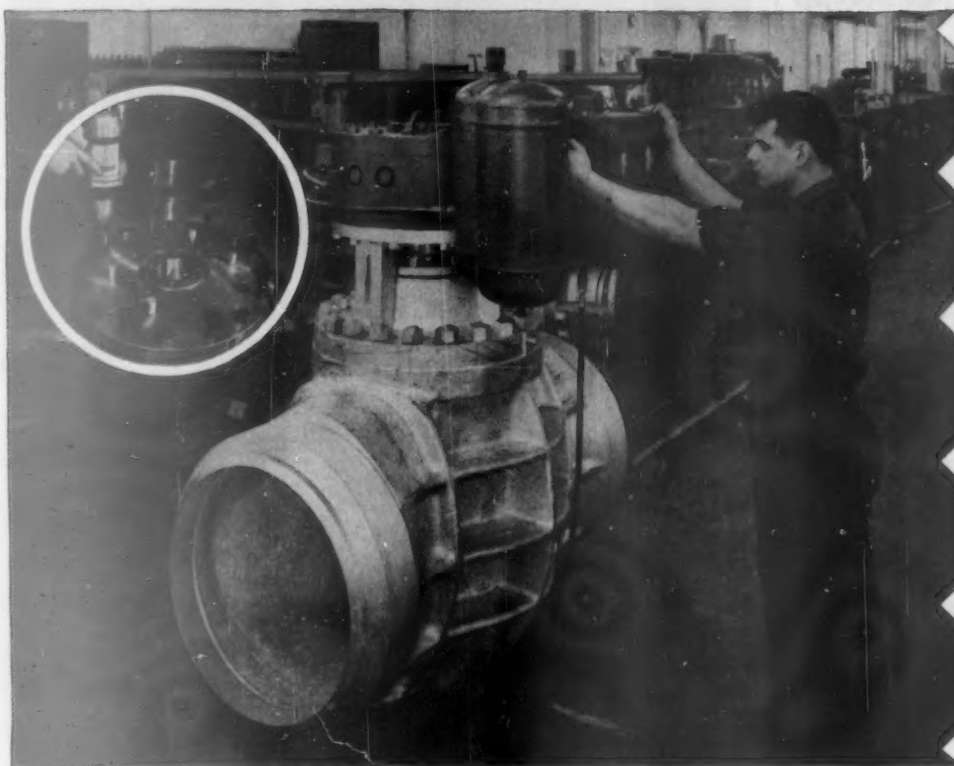
Service is what you want and service is what your SEALMASTER Distributor is prepared to give—a good man to know and depend on.

SEALMASTER BEARINGS
A DIVISION OF STEPHENS-ADAMSON MFG. CO.
51 RIDGEWAY AVENUE • AURORA, ILLINOIS

PLANTS IN: LOS ANGELES, CALIF. • CLARKSDALE, MISS. • BELLEVILLE, ONTARIO
For More Information Write No. 174 on Inquiry Card—Page 32



Write for
Catalog 454



Stanscrew service adds strength, lowers costs for Shafer Valve Company

The valve operators produced by Shafer Valve Company of Mansfield, Ohio are used to open and close large valves on gas pipe lines . . . often in remote locations, many miles from human supervision. They are subject to sudden surge loads which cause extremely high stresses . . . and their critical importance demands unfailing reliability of all components.

Shafer formerly manufactured their own fasteners for this demanding application from a special high strength steel. Then their distributor arranged for a visit from Stanscrew's fastener specialist. He quickly established that Stanscrew's heat-treated "Carbon Restoration" cap screws, correctly applied, could provide even greater fastener strength . . . and at a sig-

nificant saving in cost.

The Stanscrew fastener specialist may be able to make similar savings or improvements in your assembly operations. For he brings to your application the experience and facilities which have made Stanscrew a leading supplier of fasteners to the top names in American industry for over 80 years. And he can select money-saving answers to your problems from a complete line of over 5,000 different types and sizes of standard fasteners . . . always in stock, quickly available.

Whatever your fastener requirements, call your nearby Stanscrew distributor today. He will arrange for a prompt visit from the Stanscrew fastener specialist.

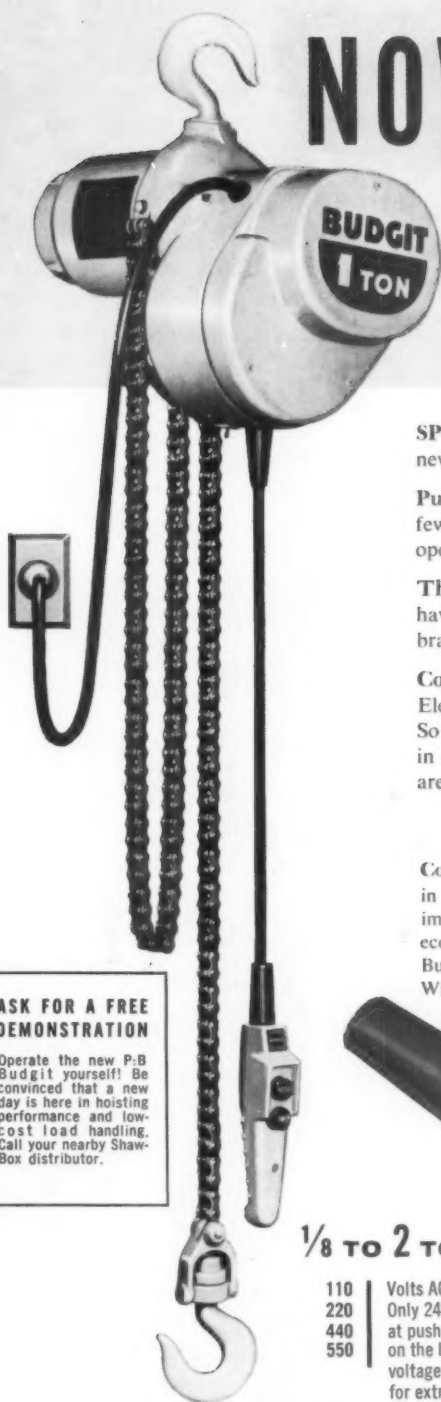


FASTENERS

CHICAGO | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS
HMS | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT
WESTERN | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

STANDARD SCREW COMPANY 2701 Washington Boulevard, Bellwood, Illinois

For More Information Write No. 175 on Inquiry Card—Page 32



NOW P:B BUDGIT®

ELECTRIC HOIST

"FRACTURES FRACTIONS"

SPOTTING speed and accuracy are "right on the button" with this new Push Button Budgit Electric Hoist.

Push button action is so sensitive you can spot loads precisely in a few ticks of time. The control station fits the palm for one-hand operation, leaving the other hand free to guide the load.

The P:B Budgit has two automatic brakes. Heavy-capacity cranes have the same type of load brake. It's the only hoist with mechanical brake built into the motor. Each brake alone can hold the load.

Compartmented components add still more value to the P:B Budgit Electric Hoist. All electricals are enclosed, safe from dirt and moisture. So are the motor and motor brake. Gearing and load brake operate in an oil bath, sealed against airborne substances. Maintenance needs are simple as can be.

SEE BULLETIN FOR DETAILS

Compare the new P:B Budgit Hoist with any other electric in its class. It's a portable hoist you hang up, plug in, and use immediately with top efficiency, safety, convenience, and economy. Get full details, plus data on pull cord operated Budgit Hoists in AC, DC, and 12-volt battery powered models. Write for Bulletin 15010-15C today.



ASK FOR A FREE DEMONSTRATION

Operate the new P:B Budgit yourself! Be convinced that a new day is here in hoisting performance and low-cost load handling. Call your nearby Shaw-Box distributor.

1/8 TO 2 TONS

110	Volts AC. Only 24 volts at push buttons on the higher voltage models for extra safety.
220	
440	
550	

AUTHORIZED SERVICE STATIONS from coast to coast save time, trouble, and money for every Budgit user.



60 A-1



BUDGIT ELECTRIC HOISTS

A Product of

MANNING, MAXWELL & MOORE, INC.

Shaw-Box Crane & Hoist Division • Muskegon, Michigan

In Canada: Manning, Maxwell & Moore of Canada, Ltd., Galt, Ontario

For More Information Write No. 176 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 177 on Inquiry Card—pg. 32→

MARCH 14, 1960

33

In ultra-modern heat-treating facilities  is making the metal that meets a nation's growing appetite for strong, tough aluminum alloys

Olin Aluminum has completed a major expansion of its sheet production capabilities... is now turning out heat-treated and heat treatable alloys to meet Federal specifications for quality, analysis, temper and strength.

If you're considering high strength alloys, let Olin Aluminum metallurgists, engineers and design experts work with you to pinpoint

the right sheet, extrusion or casting alloys and finishes for your applications.

Let us show you, too, how firms like yours are finding new markets...developing new products...with the strong-as-steel material that's light and bright, but rugged enough for the most punishing applications. See Edward R. Murrow on "Small World" — every Sunday Evening — CBS-TV.

OLIN ALUMINUM IS HEAT-TREATED

SHEET THICKNESS: .012" through .250**			PLATE THICKNESS: up to 1/2"
ALLOYS	TEMPERS	WIDTHS**	LENGTHS
6061	Flat Sheet: O, F, T4 & T6	3" to 60"	24" to 255" depending on thickness
	Coiled Sheet: O & F	1" to 60"	
ALCLAD 6061	Flat Sheet: O, F, T4 & T6	3" to 60"	24" to 255" depending on thickness
	Coiled Sheet: O & F	1" to 60"	
2024	Flat Sheet: O, F, T3, T36 & T86	3" to 60"	24" to 255" depending on thickness
	Coiled Sheet: O & F	1" to 60"	
ALCLAD 2024	Flat Sheet: O, F, T3, T36 & T86	3" to 60"	24" to 255" depending on thickness
	Coiled Sheet: O & F	1" to 60"	
7075	Flat Sheet: O, F & T6	3" to 60"	24" to 255" depending on thickness
	Coiled Sheet: O & F	1" to 60"	
ALCLAD 7075	Flat Sheet: O, F & T6	3" to 60"	24" to 255" depending on thickness
	Coiled Sheet: O & F	1" to 60"	
*Alclad 6061 not available in thicknesses less than .032			Other heat treatable alloys available, subject to special inquiry
**Minimum width in "O" temper—6 inches			

OLIN
ALUMINUM®

NOW SHIPPING STRONG ALLOY SHEET

Call fast-moving Olin Aluminum today and find out what **service** really means. Check the Yellow Pages for your local Olin Aluminum representative or for off-the-shelf service from our distributors.



OLIN MATHIESON • METALS DIVISION • 400 PARK AVENUE, NEW YORK 22, NEW YORK

Shop your markets QUICKLY...PROFITABLY

by Long Distance



Find the best buys. Make sure the price is right and the goods meet your spec's.

Order the right quantity. Double-check the needs of your outlying plants or offices before ordering.

Get the best service. Pinpoint delivery dates and methods of shipment.

Do it all faster, more economically, more profitably—with personal Long Distance telephone calls!

LONG DISTANCE RATES ARE LOW

Here are some examples:

Chicago to Grand Rapids	60¢
Pittsburgh to Cincinnati	90¢
Phoenix to Los Angeles	\$1.10
Birmingham to Washington, D.C. .	\$1.40
Houston to Newark, N.J. . . .	\$1.80

These are day rates, Station-to-Station, for the first three minutes. Add the 10% federal excise tax.

BELL TELEPHONE SYSTEM



Long Distance pays off! Use it now...for all it's worth!

For More Information Write No. 178 on Inquiry Card—Page 32



COST is the intimate concern of purchasing. Cost per unit depends on steady output. Steady output must depend on organized lubrication. **QED:** Organized lubrication is purchasing's concern, too.

Why PURCHASING has a stake in good lubrication practices

If you recognize lubrication for what it is—a cost-reducing tool, not an expense item—you may effect savings that can add up to many hundred times the cost of the lubricants themselves. Your purchasing department is in an ideal position to help make these potential savings real. That's why organizing lubrication is your responsibility, too.

Texaco can help you achieve these savings. Texaco Lubrication Engineers have had valu-

able experience in tailoring Organized Lubrication Programs to the needs of virtually every industry. They can help show *you* the way to important savings. Why not talk to your nearest Texaco Lubrication Engineer today—or write for our new Book "Organized Lubrication—Major Cost Control Factor."

★ ★ ★

Texaco Inc., 135 East 42nd Street, New York 17, N. Y., Dept. P 140.



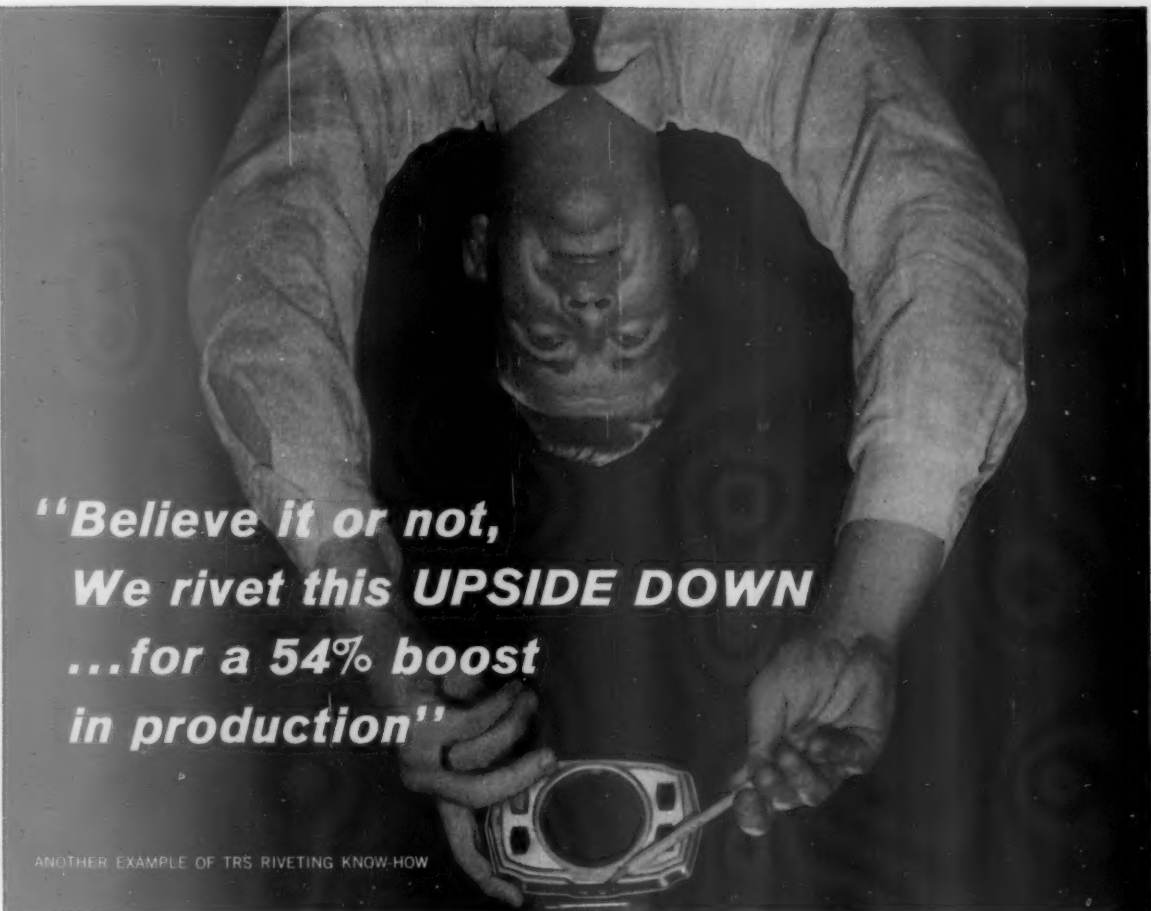
LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

Tune In: Texaco Huntley-Brinkley Report, Mon. through Fri.-NBC-TV

MARCH 14, 1960

For More Information Write No. 179 on Inquiry Card—Page 32

37



**"Believe it or not,
We rivet this UPSIDE DOWN
...for a 54% boost
in production"**

ANOTHER EXAMPLE OF TRS RIVETING KNOW-HOW

Ekco Products Company had been fastening wall brackets to their soap dishes and glass holders with solid aluminum rivets... hand-assembling the components and placing the assembly in a die which required two press strokes to fasten the parts. Production volume had reached a ceiling, and cost reduction was becoming imperative.

Automatic machine riveting, with semi-tubular rivets, would offer substantial savings, but obstructing flanges on the product itself seemed to rule it out... until the TRS man suggested a new viewpoint. Working with Ekco engineers, he proposed feeding the rivets upside down and inverting the assembly for the fastening operation, providing unobstructed travel for the rivet-setting driver. The rivets were kept with the heads visible, as required for good appearance.

Result: no hand assembly, daily output up 54%.

Let the TRS man look over your assemblies. You'll find that he has the viewpoint of a manufacturing engineer, and a knack for making fastening simpler, faster, better.

Of course he will recommend TRS rivets. But he will give you sensible reasons why they are more reliable in quality and uniformity. Superior quality control is one big result of a five-year modernization of this pioneer company—modernization of people, policies, production and service facilities. *You'll like to do business with the new TRS... we'll make sure of it.*

*Don't Buy Riveting Machines until you learn how the TRS **PAR** process revolutionizes riveting*

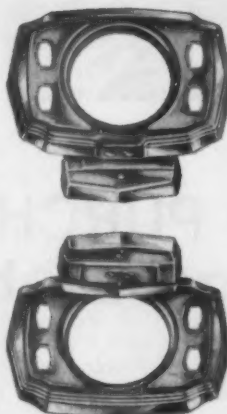
TRS

TUBULAR RIVET & STUD COMPANY

QUINCY 70, MASSACHUSETTS • TRS SALES OFFICES: Atlanta • Buffalo • Charlotte • Chicago
Cleveland • Dallas • Detroit • Hartford • Indianapolis • Los Angeles • New York
Philadelphia • Pittsfield • Quincy • St. Louis • Seattle. WAREHOUSE IN CHICAGO
See "Yellow Pages" for phone numbers.

If it's a Tubular Rivet TRS makes it... and Better

A PROFITABLE CHANGE IN VIEWPOINT



In the Ekco-Autoyre glass holder (shown) and soap dish, the rivet clinch must not be visible, but normal setting with the rivet heads on the visible surface was impossible because flanges on the product obstructed motion of the setting driver. To solve the problem, a semi-tubular rivet was designed with a flat head, to be fed and set in an inverted position with a TRS Model 103L machine. The end of the driver was shaped to form the clinch, and the machine was fitted with an air-operated pusher to eject the finished product.



For More Information Write No. 180 on Inquiry Card—Page 32

38

For More Information about ad on facing page Write No. 181 on Inquiry Card—pg. 32→

PURCHASING



Simplest, surest way to a "thousandth" fit . . . right at the job

What you see here is a shim. Not an ordinary shim, but a shim of LAMINUM—and that's what makes the difference in convenience, accuracy, speed and economy.

LAMINUM is the registered trade name for the laminated shims whose layers are completely surface-bonded to look and act like solid metal. Yet the laminations are easily p-e-e-l-e-d to bring the shim to any desired thickness for an individual, perfect fit, right at the assembly line.

No stand-by equipment. No machining. No grinding. No counting. No stacking or miking. And no grit between layers—ever. *That's* what saves time! And cuts costs!

Shims of LAMINUM are economically custom-made to your specifications. In brass, mild steel, stainless and aluminum, with laminations of .002" or .003". For quick service, send your inquiries for information or estimates directly to . . .

THE LAMINATED SHIM COMPANY, INC.

Home Office and Plant: 2403 Union Street, Glenbrook, Connecticut
West Coast Sales and Service: 600 Sixteenth St., Oakland 12, Calif.



GET THE FACTS

Write for SHIM DESIGN Folder No. 3—eight pages of up-to-date, well illustrated design information and specifications.

two more cases where

PARTS PRODUCED FROM
provide excellent bearing properties

CASE HISTORY

MUELLER BRASS CO. 600 ALLOY
screw machine product used in
heavy duty farm equipment

This heavy duty planetary pinion shaft, made as a screw part from tough "600" series bearing alloy, was the answer to a continuing wear problem encountered in the driving mechanism of heavy-duty farm equipment and big trucks. The part is machine produced to exacting tolerances and all necessary finishing operations are done by Mueller Brass Co. so the pinion shaft is ready for installation when received. Since "600" alloy parts have been installed, no operating failures have been reported and the shafts have proved far superior to the material formerly used.



MUELLER BRASS CO.
ANALYSIS SERVICE

You get sound, unbiased advice on the one best method of making your parts because Mueller Brass Co. is the only fabricator in the country offering all these methods of production. An experienced

Methods Analysis Department has at its command a complete knowledge of the advantages and limitations of each production process. This unique technical service is your assurance of getting the best product at the best price . . . made the one best way!

COLD-PREST
IMPACT EXTRUSIONS



PLASTIC INJECTION
MOLDING

MUELLER BRASS CO.

MUELLER BRASS CO. 600 ALLOY

and maximum wear resistance in tough applications

CASE HISTORY

MUELLER BRASS CO. 600 ALLOY forgings used in aviation air compressors

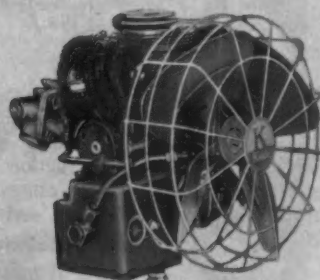
Analyzing the job requirements of Walter Kidde & Company, Inc., for a main driving cam component to be installed in a reciprocating type of aircraft air compressor, Mueller Brass Co. Methods Analysis Engineers decided on a forging fabricated from "600" alloy as the most practical method of production. Since the cam forms the prime component of the driving mechanism, it must have good bearing wear surfaces and because the compressors are used in the aviation industry, the cams must be completely dependable. The close grained, strong forging that resists combination compressive and tensile stresses was the answer.

A typical compressor takes in ambient air and compresses it to 3000 psi or higher. This high pressure air is stored in metal or

fiberglass containers until needed for actuation of pneumatic system components such as solenoid control valves, brake valves, manual control valves or actuators. These and other pneumatic units retract the entrance door, operate landing gear, wheel brakes, nose wheel steering systems, propeller brakes or perform other functions.

Aircraft in which Kidde compressors are installed include the Boeing 707, the Douglas DC-8, the Lockheed Electra, the Fairchild F-27 and various military aircraft.

Mueller Brass Co. produces press, hammer or cored forgings of any practical shape from a few ounces to 150 lbs. in brass, bronze, aluminum and magnesium in 27 standard, as well as special, alloys.



Aircraft air compressor equipped with hydraulic drive delivers air compressed to 3000 psi at the rate of 6 cfm.



This yoke forging is lightweight, yet strong; has excellent bearing wear surfaces.



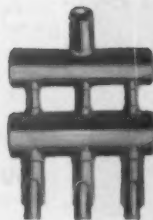
Forging is part of the main cam, the prime component of a modified Scotch-type yoke, which is the piston driving mechanism in the air compressor.



POWDERED METAL PARTS



SAND CASTINGS



FORMED COPPER TUBE



PORT HURON 30, MICH.

Write today for free technical literature on any one or all of the seven fabricating methods.

286

Information For Your Catalog Files

ALUMINUM IMPACTS

A 34-page foil-covered booklet on the aluminum impact extrusion process. Twelve main sections outline design possibilities, tolerances, size ranges, and applications.

Aluminum Company of America

Write No. 1 on Inquiry Card—Page 32

CHAIN AND SPROCKETS

Bulletin A691 covers roller chain and sprockets. The 56-page catalog contains photographs and diagrams that show construction details. Includes selection data, horsepower ratings, instructions for lubrication and maintenance, and list prices.

Dodge Manufacturing Corporation

Write No. 2 on Inquiry Card—Page 32

COMPRESSORS

A 24-page bulletin describing WN-114 stationary compressors. Includes specifications on three basic models of the semi-radially constructed units ranging from 1385 cfm to 1948 cfm at 125 psi. Explains design, components, inter-cooling, lubrication, motor mountings, and accessories.

Joy Manufacturing Company

Write No. 3 on Inquiry Card—Page 32

DRILL PRESSES

Bulletin AD-1222 covers radial drill presses. The two-color bulletin includes specifications and 12 close-up photographs illustrating various operations.

Rockwell Manufacturing Company

Write No. 4 on Inquiry Card—Page 32

DUST COLLECTORS

Bulletin 1828 describes Series 342 dust collectors. The 16-page illustrated two-color brochure includes applications and construction features. Includes a pair of nomogram presentations and illustrated assembly arrangements.

American-Standard

Write No. 5 on Inquiry Card—Page 32

ELECTRICAL INSULATING MATERIALS

GET-2929 describes characteristics and applications of insulating materials for electric equipment. Includes text, tables, and illustrations of available products, including varnishes, paints, adhesives, compounds, thinners and permafil.

General Electric Company

Write No. 6 on Inquiry Card—Page 32

FASTENERS

A 24-page two-color illustrated catalog describing a line of fasteners. Includes driving cycles, strength data, typical applications, grip ranges, dimensional data, and hole size recommendations. Also discusses installation tools.

Huck Manufacturing Company

Write No. 7 on Inquiry Card—Page 32

FILTRATION EQUIPMENT

Catalog GEO-506A covers a line of filtration equipment. The eight-page bulletin gives a brief description of each product, classified according to applications, operating pressures, and sizes. Both filters and various types of filter media are illustrated.

Commercial Filters Corporation

Write No. 8 on Inquiry Card—Page 32

FUSE RATINGS

Data Bulletin 205 gives new power fuse interrupting ratings in both amperes and kva. Ratings, based on AIEE specifications, are given with and without mufflers—for indoor and outdoor holders and for solid-material and liquid fuses.

S&C Electric Company

Write No. 9 on Inquiry Card—Page 32

GAGES

A catalog on various types of gages. The 24-page manual includes pricing information and illustrations on plug, ring, thread, and plain gages. Charts are included for tap recommendations for classes of threads.

Beloit Tool Corporation

Write No. 10 on Inquiry Card—Page 32

GRINDING

A 16-page illustrated presentation on industrial grinding. Capacity and tolerance ranges of each grinder are described and details of typical parts are shown.

Universal Grinding Corporation

Write No. 11 on Inquiry Card—Page 32

GUYS

Booklet No. 37-300 illustrates procedures to be used in single guying, multiple guying to a single anchor rod, and multiple guying. The 32-page bulletin contains 48 photographs to illustrate step-by-step application techniques.

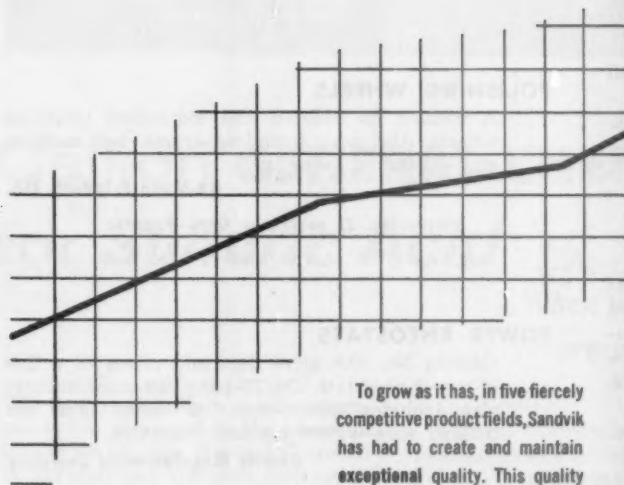
Preformed Line Products Company

Write No. 12 on Inquiry Card—Page 32

Extraordinary QUALITY

Major
Reason
For

SANDVIK'S GROWTH



To grow as it has, in five fiercely competitive product fields, Sandvik has had to create and maintain exceptional quality. This quality proves itself in outstanding and consistent performance. And, it is this performance which has earned, held and increased Sandvik's customers.

SANDVIK STEEL, INC.



1702 Nevins Road, Fair Lawn, N. J.
Swarthmore 7-5200 • In N. Y. C.
Algonquin 5-2200

Branch Offices: Cleveland • Detroit
Chicago • Los Angeles

SANDVIK CANADIAN LTD. • P. O.
Drawer 1335, Sta. O., Montreal 9,
P. Q.

Works: Sandviken, Sweden

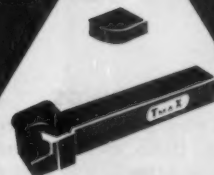
... in SPECIALTY
COLD ROLLED
SPRING STEELS,
WIRE AND
TUBING



... in STEEL BELT
CONVEYORS AND
PROCESSING
UNITS



... in COROMANT
CARBIDE
TOOLING



... in POWER
SPRINGS



... in HAND
SAWS AND
TOOLS



GG-202

Information For Your Catalog Files

INDUCTION HEATING

A folder on induction heating equipment for automated metal heating. Describes main features of motor generator sets, control stations, and both fixed-installation and portable heating stations.

Robotron Corporation

Write No. 13 on Inquiry Card—Page 32

INDUSTRIAL TRUCKS

A four-page folder illustrating and describing 5000-lb.-capacity industrial trucks. Provides diagrams, photographs, and a detailed analysis of each important working part.

Elwell-Parker Electric Company

Write No. 14 on Inquiry Card—Page 32

INVESTMENT CASTING

A brochure on methods of investment casting. The 20-page bulletin explains the new ceramic shell process.

Hitchiner Manufacturing Company, Inc.

Write No. 15 on Inquiry Card—Page 32

MINIATURE BALL BEARINGS

A 140-page manual on miniature and instrument ball bearings. Gives specifications on 370 standard bearings from 1/10 to 5/8 inch OD. Includes information on testing, packaging, and marking—as well as data on corrosion resistance, duplexing, lubrication, and storage.

New Hampshire Ball Bearings, Inc.

Write No. 16 on Inquiry Card—Page 32

MULTI-ARC WELDING

A bulletin on the technical and economic significance of recent developments in multi-arc welding. Explains the multi-arc principle and includes a table summarizing comparative costs. Typical "building block" units are illustrated and described.

J. B. Nottingham & Co., Inc.

Write No. 17 on Inquiry Card—Page 32

NUTS

An eight-page illustrated catalog on lock, weld, and semi-finished nuts. Includes sizes, specifications, and application information.

MacLean-Fogg Lock Nut Company

Write No. 18 on Inquiry Card—Page 32

PACKINGS

Catalog FF-1059 describes 14 types of fabric, foil, plastic, and filament packings. The illustrated bulletin lists details of composition, application, service, and temperature limits. Includes tables and a price list.

Greene, Tweed & Co.

Write No. 19 on Inquiry Card—Page 32

PLASTICS

A 56-page catalog on a line of plastics. Presents information and prices on grades, sizes, and tolerances of sheet, rod, tubing, and other forms. Also includes tables of properties of more widely used plastics.

Almac Plastics, Inc.

Write No. 20 on Inquiry Card—Page 32

POLISHING WHEELS

A catalog on inflated and expanding polishing wheels. Also covers sanding drums, belt sanders, and expanding cones.

Nu-Matic Grinders, Inc.

Write No. 21 on Inquiry Card—Page 32

POWER RHEOSTATS

Catalog No. 30A gives data and prices of a line of power rheostats. The 32-page two-color bulletin also includes information on metal film and molded wire-wound precision resistors.

Ohmite Manufacturing Company

Write No. 22 on Inquiry Card—Page 32

POWER SUPPLIES

A 16-page two-color catalog on power supplies. Includes a selection chart and complete data on 75 different power supplies.

Dressen-Barnes Corp.

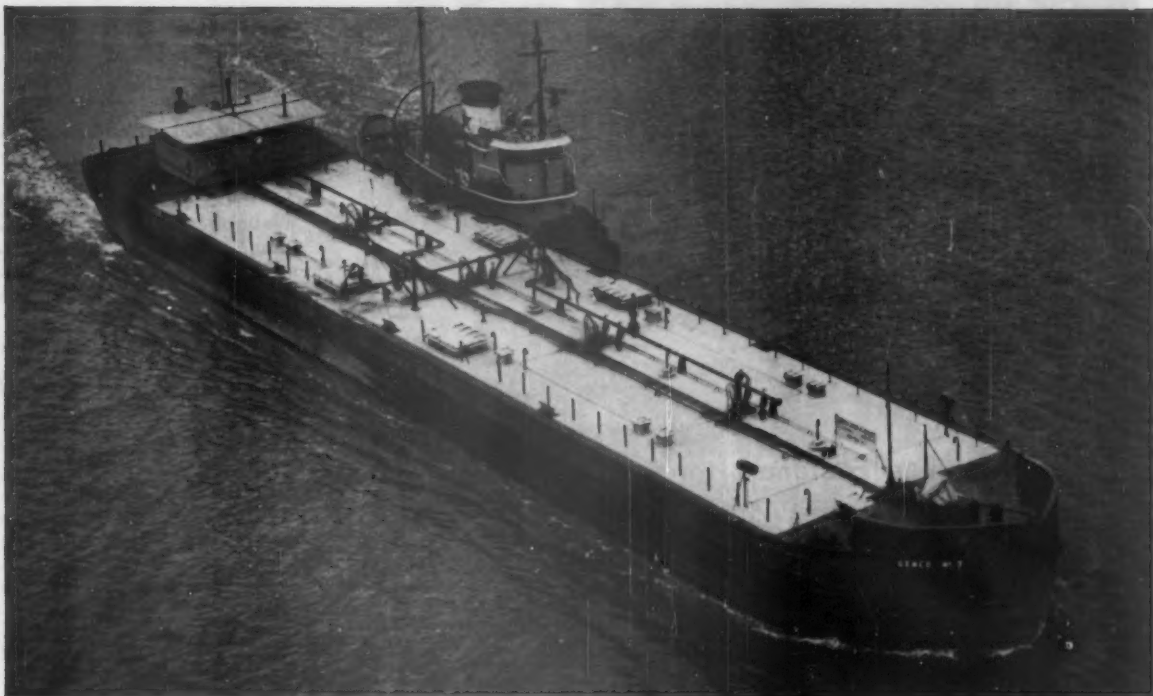
Write No. 23 on Inquiry Card—Page 32

POWER TOOLS

Catalog No. 60 describes and illustrates a line of power tools. The 44-page bulletin includes information on jointers, lathes, planers, band filers, grinders, and spinning tools.

Beice-Grane Co.

Write No. 24 on Inquiry Card—Page 32



Capacity—2000 tons of sulfuric! The "Genco 7" is the largest in General Chemical's fleet of eight sulfuric acid barges.

Call on **GENERAL CHEMICAL** for **Sulfuric Acid** ...As you need it!

...When you need it!

...Where you need it!

Whether your sulfuric acid requirements are measured in thousands of tons or carboy lots, General Chemical is best equipped to handle your order.

General's extensive network of production facilities plus its large and flexible transportation system assures you of sulfuric as you need it... when you need it... where you need it!

For example, we have eight sulfuric barges serving customers along the Atlantic coast and on inland waterways. Three operate out of Marcus Hook (Philadelphia), Pa. Two in the New York City area, including the 2000-ton capacity "Genco 7" shown above. Three on inland waterways. General also operates the largest fleets of sulfuric tank cars and tank trucks

in the country.

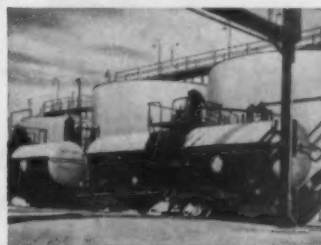
General Chemical has 21 sulfuric plants,* as well as stock points in key industrial centers across the country. Each is geared to meet regional requirements, offering customers the advantages of "next door" location to General's modern facilities. In addition, the output of one plant backs up that of another, making a coast-to-coast supply line which proves invaluable in meeting emergencies or unexpected demands.

Why not find out how our long experience and extensive facilities can benefit you? For further information, write or phone the nearest General Chemical sales office.

*In Canada: Allied Chemical Canada, Limited



Large fleets of tank transports provide fast over-the-highway service.



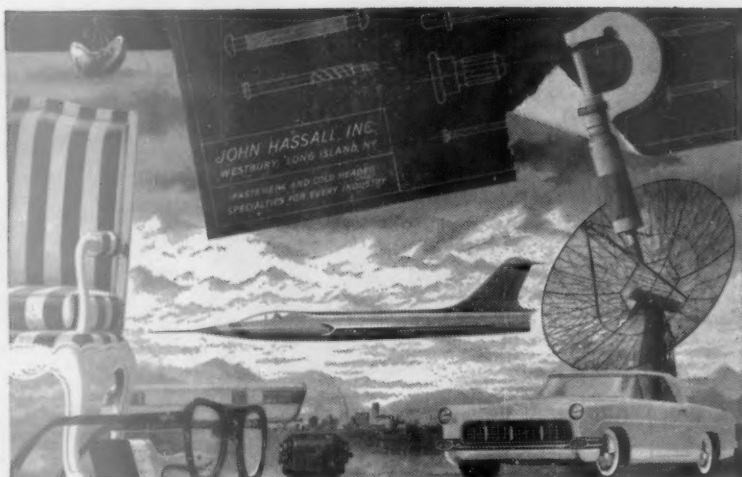
By far the largest fleet of sulfuric tank cars is operated by General Chemical.



General Chemical sulfuric acid is also available in 13-gallon carboys.



GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.



Job-Designed Fasteners for Every Industry



Here is a fast, dependable, low cost, quality minded source of supply for **JOB-DESIGNED** fasteners of all types, in any metal, to fit your own assembly problem. Assembly costs are a very major part of manufacturing expense. Most of this is labor. The fastening medium itself is usually a minimum item. If a Job-Designed fastener makes assembly simpler and faster, permits the use of fewer fasteners, allows the designer functional freedom and improves product efficiency, yours is a specifying job well done. All these

possibilities are available when you come to Hassall for design assistance and quotation on challenging, difficult or unusual rivets, threaded nails, drive screws and other cold headed parts. Short or long runs, pilot quantities, engineering counsel, over 100 years of intimate association with cold heading—and a deep appreciation for the concept of value analysis—all are part of the Hassall service to you.

Send for a copy of our latest catalog.

JOHN HASSALL, INC.
MANUFACTURERS SINCE 1815
P.O. BOX 2268 • WESTBURY, LONG ISLAND, N. Y.

For More Information Write No. 185 on Inquiry Card—Page 32

TOM BIGBEE SAYS:

"the finest pulp in the South goes into Marathon towels and tissue"



Right here in Marathon Southern's Naheola mill on the Tombigbee River, the finest timber in the South produces the finest towels and tissue used in any industrial washroom. These towels are soft, strong and absorbent. One will do the job of several ordinary towels. Marathon tissue is the symbol of softness with exceptional breakdown ability. Marathon dispensers, recessed or wall-mounted, assure foolproof dispensing with no waste. See your Marathon paper merchant for complete details.

marathon

A Division of American Can Company
MENASHA, WISCONSIN

Single-, multi- or C-fold towels, bleached or unbleached.
Service Roll or Dorsette Facial Grade Tissue. Dispensers.

For More Information Write No. 186 on Inquiry Card—Page 32

Catalog Files

PUMPS

Bulletin 130 covers industrial centrifugal pumps. Gives details on size, performance characteristics, and integral motors. Features single-stage pumps, volute-type units, and multi-stage series. Includes illustrations, outline drawings, photos, and diagrams.

Eastern Industries

Write No. 25 on Inquiry Card—Page 32

SAFETY PAINT

A brochure on fluorescent safety paint. Illustrates nine detailed applications to hazards and safety equipment.

Switzer Brothers, Inc.

Write No. 26 on Inquiry Card—Page 32

SAW BLADES

Bulletin 578 covers saw blades. The 36-page handbook and catalog gives common cutting problems and their solution, along with recommendations for cutting a wide variety of metals and non-metals. Sizes and types of blades are tabulated for quick reference.

Ladish Co.

Write No. 27 on Inquiry Card—Page 32

SEQUENCE RELAYS

Bulletin No. 2001 describes 18 standard phase sequence relays. Includes illustration, specifications, and a dash number system.

Master Specialties Company

Write No. 28 on Inquiry Card—Page 32

SWITCHES

Data Sheet 168 gives details on center neutral limit switches. Includes photos, dimension drawings, operating details, prices, and discounts.

Minneapolis-Honeywell Regulator Company

Write No. 29 on Inquiry Card—Page 32

PURCHASING

DoALL ECONOMY SPECIAL

VANADIUM HIGH-SPEED STEEL TAPERED END MILLS

Now you can buy end mills of this premium material to cut your machining costs—and still pay the same or less than for similar tools of conventional M-2 steel.

DoALL vanadium H.S.S. tapered end mills allow you to machine all conventional as well as hard, abrasive materials, Rc 30-40 and the newer, tough-to-cut, high-strength, high-heat-resistant metals. That's because these end mills have a higher red-heat hardness and substantially more resistance to abrasion. Their specially designed cutting face and taper give maximum cutting efficiency and make them ideal for use on extrusion dies, die-cast molds and similar work.

Try these DoALL vanadium H.S.S. tapered end mills for increased tool life at lower prices. Now available in a complete range of sizes and tapers— $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, 3, 5, 7 and 10 deg. taper per side. Tips $\frac{1}{8}$ in. through $\frac{1}{4}$ in.

**COST
NO MORE THAN
ORDINARY
END MILLS**



The Only End Mills with These 10 Important Features

- ✓ Vanadium High-Speed Steel
- ✓ Triple Draw
- ✓ Three Flute
- ✓ Double Back-Off
- ✓ Constant Spiral
- ✓ Hy-Helix
- ✓ End Cutting Teeth
- ✓ Higher Red-Heat Hardness
- ✓ More Abrasion Resistance
- ✓ Longer Life, Lower Cost

Call your local DoALL Sales-Service Store for prices.

IN STOCK
AT YOUR LOCAL DoALL STORE
all laboratory-inspected

Find Your DoALL STORE in the "Yellow Pages"

Machines and Blades, Surface Grinders, Power Saws

AIR HARDENING OIL HARDENING

Reach for Your DoALL Catalog

THE DoALL COMPANY • DES PLAINES, ILLINOIS

free



17-page encyclopedia of UNIFORMS IN AMERICAN INDUSTRY

- Packed with money-saving fabric information
- Over 15 fabric swatches
- 11 valuable comparison charts
- Actual case histories

Here are two companies that saved money with the valuable information you'll read in this book:

■ a national vending company saved \$20,000 annually merely by changing to uniform fabrics recommended in this book!

■ a Boston dairy cut its operating budget drastically by changing to uniforms with 3 times longer wear recommended in this book!

You, too, can save money—and time—with this handy FREE book. For instance, do you know:

Which fabric launders most easily?
Which fabric wears longest?

Write today for answers—fill out coupon below!

Mail this coupon to:
E. I. du Pont de Nemours & Co. (Inc.)
Uniforms, Centre Rd. Bldg., 31J1
Wilmington 98, Delaware

Name _____

Address _____

City _____ Zone _____ State _____

B3



REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY
For More Information Write No. 188
on Inquiry Card—Page 37

Letters To The Editor

KUDOS FROM THE SENATE

Possible effects of the recent settlement of the 116-day steel strike were discussed in Editor Paul Farrell's editorial "Can You Say No?" (Feb. 1, p. 47). Because of the importance of this subject to American business, PURCHASING Magazine sent advance copies of this editorial to many government leaders. These are two of the replies that have been received:

Dear Sir:

I wish to thank you for giving me the benefit of your views on the steel strike.

Because of your interest, I am enclosing a copy of a letter I wrote to Alexander Jones of the *Syracuse Herald-Journal* in which I discussed in some detail the role that Secretary Mitchell and I played in the mediation efforts that brought the strike to a conclusion.

With every good wish.

Richard Nixon
Washington, D.C.

Dear Sir:

Thank you for your letter of January 22 and the accompanying article.

We would like to receive any information that comes to the attention of your organization concerning the time or magnitude of the expected steel price rise.

Estes Kefauver
Washington, D.C.

RIGHT ARM OF PURCHASING

Dear Sir:

As a marketing manager responsible for both sales and purchasing, I am continually impressed by your magazine.

It has not only helped me to direct our own purchasing program more effectively, but it has enabled me to prepare and better train our salesmen to help the "buyer of today." I know our salesmen will be better equipped to sell if they too are schooled in value analysis.

To contribute, indirectly, to better purchasing we have kicked off with a six month sales training program for all our men, young and old, new and experienced. We know it will make them better salesmen. In this way they will not be time wasters for the buyer. Rather, they will be idea men, strong right arms of progressive purchasing men.

We know we have excellent salesmen today, but we must continually keep pace as the purchasing agent progresses in his development.

Robert E. Fittin
Vice President
Inlander-Steindler Paper Co.
Chicago, Illinois

PURCHASING'S VOICE

Dear Sir:

In the January 18 issue of PURCHASING Magazine (page 72) you have an article by A. L. McMillan entitled, "A Fair Day's Work in Purchasing."

Much of this article I did not like, but one particular part I cannot swallow at all. It begins: "If the purchasing department takes over such responsibilities [selecting items to be bought, determining quality specifications, or deciding quantities to be ordered] it violates a basic principle of management."

He states that the buyers are thereby doing the work of the engineer or production superintendent. For a man in Mr. McMillan's position to come up with a statement like that is a blow to purchasing agents who have been trying so hard to convince people that we are the logical department to have the strongest voice in these matters.

Neither is qualified for, entitled to, or wants the authority Mr. McMillan says is his. If he is such a man, he would soon move up to top management. Perhaps even to purchasing agent?

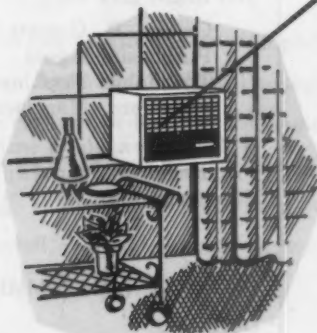
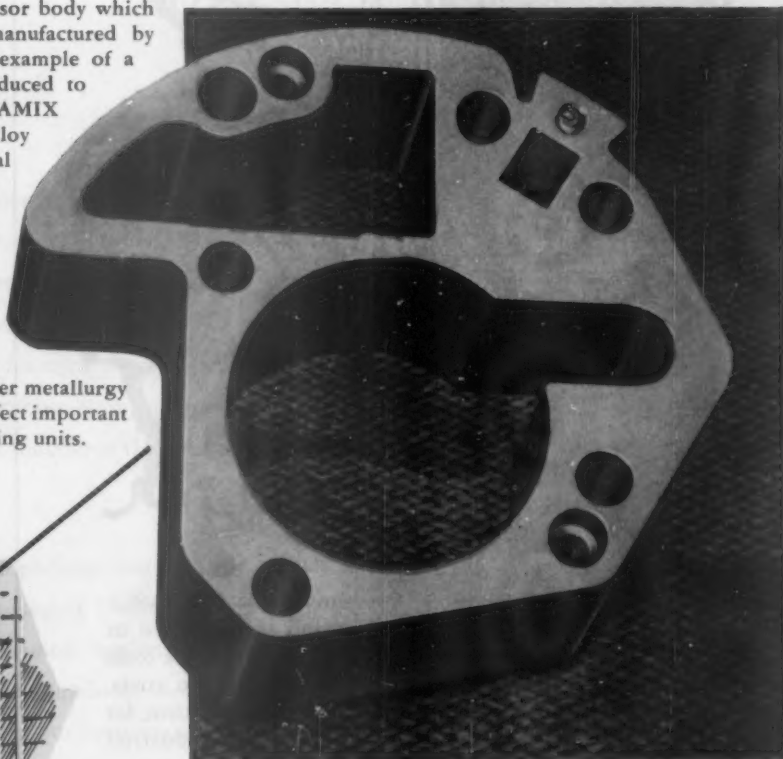
Don't get me wrong. Both of these men deserve a loud voice in deciding such matters. Business organizations are a team, but the

(Please turn to page 50)

GRAMIX[®] COMPRESSOR BODY IS VITAL PART IN GENERAL ELECTRIC AIR CONDITIONER . . . this GRAMIX part is a

new concept in powder metallurgy techniques . . . engineered to meet requirements of GENERAL ELECTRIC's new compressor design

This large, complex shaped compressor body which is employed in air conditioners manufactured by General Electric is an outstanding example of a GRAMIX part engineered and produced to exacting specifications. As in all GRAMIX products of powder metallurgy, the alloy was created to meet exacting physical properties required in this particular application. Correct briquetting, controlled sintering procedures, precise finishing operations and rigid quality control throughout the manufacturing process assures General Electric uniform, dependable GRAMIX parts. The production of this body as a product of powder metallurgy has also enabled General Electric to effect important design changes in their air conditioning units.



This part is shown full size. Actual weight: 2 1/4 lbs.



Write today for these helpful engineering manuals. Engineering Bulletin No. 18 covers design and metallurgical requirements and alloy selection of GRAMIX bearings. No. 19 contains facts about GRAMIX Machine Parts and No. 21 contains general information on GRAMIX products from Powder Metallurgy. Get your copies now.



X-274-1

THE UNITED STATES GRAPHITE COMPANY
DIVISION OF THE WICKES CORPORATION, SAGINAW 15, MICHIGAN
GRAPHITAR[®] CARBON-GRAPHITE • GRAMIX[®] POWDER METALLURGY • MEXICAN[®] GRAPHITE PRODUCTS • USG[®] BRUSHES

MARCH 14, 1960

For More Information Write No. 189 on Inquiry Card—Page 32

49

"Call FOSTER... they'll ship Switch Material PLUS"



Right! L. B. Foster Company will ship switch material "plus" any standard rail section (new or relaying), crane rail and accessories, and track tools—everything you need, at lowest possible costs. Foster is your fastest, most dependable source for every rail and track item required for industrial sidings or in-plant trackage.

One more "plus": the advantage of lower freight rates from Foster's nationwide warehouses and stocking points. To help select materials best suited to your job, call the Foster Track Specialist.

Write L. B. FOSTER CO. for new catalog PA-3
PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
HOUSTON 2 • LOS ANGELES 5 • ATLANTA 8



Faster From Foster

PIPE • PILING • RAIL

For More Information Write No. 190 on Inquiry Card—Page 32

Letters

(Continued from page 48)

loudest voice in these directions should have behind it the mind and training of the accountant, the marketing man, and the economist. These are, or should be, combined in one man: the modern purchasing agent.

Please, Mr. McMillan, don't preach this thinking too widely. Business and industry thought exactly like this during the dark ages; but, fortunately for all of us, business and industry have one infallible habit. They progress.

Paul V. Hoppel
Director of Purchasing
Lighting Products, Inc.
Highland Park, Illinois

OLD FRIENDS GET TOGETHER

Dear Sir:

In the February 1 issue of *PURCHASING Magazine* I recognized the picture of a fellow I was in the Army with back in 1944.

I am interested in corresponding with him but I do not know his address. He is shown in the picture at the top of page 84 as the moderator; G. Thomas Greenfield.

I would appreciate any help you might give me.

George R. Gossett
Purchasing Agent
The Johns Hopkins Hospital
Baltimore, Maryland

• Mr. Greenfield is with Thompson-Ramo-Wooldridge Corp., Cleveland, Ohio.

DATA ON PROGRAMMING

Dear Sir:

I am much interested in the series of articles in *PURCHASING* on Linear Programming by Dr. Smith. Could you send me reprints of these articles?

Burton B. Crandall
Associate Professor
Syracuse University
Syracuse, New York

• Reprints have been forwarded.

Planned Packaging moves merchandise

Sold and still selling!

The corrugated container—workhorse of mass distribution—has long been known for its excellent product protection. Now it's fast becoming the Cinderella of packaging. Attractive, tinted background designs—even four-color half-tone printing, pioneered by Packaging Corporation of America—are transforming drab, rubber-stamped containers into eye-catching traveling billboards that sell their contents at every opportunity.

The skillful combination of art and package design is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.

Packaging Corporation of America

Administrative Offices: Grand Rapids, Michigan; Quincy, Illinois; Rittman, Ohio

Cartons • Containers • Displays • Egg Packaging Products • Molded Pulp Products • Paperboards

MARCH 14, 1960

For More Information Write No. 191 on Inquiry Card—Page 32



Purchasing People In The News

Two new appointments in the purchasing department of **Olin Mathieson Chemical Corporation**, New York, N. Y. have been made. **F. E. Plumley** has been named



Frank E. Plumley

director of purchasing for the corporation, a newly created position, and **J. J. Forst** has been named metals specialist.

Mr. Plumley previously had been purchasing and transportation manager for New Haven divisions of the corporation. Before that he was with the purchasing departments of Westinghouse Electric Corporation and Bigelow-Sanford Carpet Company, Inc. He is a member of the Purchasing Agents Association of Connecticut and a past president of the Purchasing Agents Association of Eastern New York. He has a B. S. Degree from Massachusetts Institute of Technology. Mr. Forst joined Olin Mathieson in 1953 and served as sales development engineer prior to being appointed to the newly created post of metals specialist. He will report to the director of purchasing. He has B.S.M.E. and B.E.E. degrees from the University of Virginia.

Appointment of **Claude L. Hall** as general purchasing agent of **Western Union Telegraph Co.**, New York, N. Y., has been announced. Mr. Hall succeeds **Berjamin F. Mathews** who has retired. Mr. Hall joined Western Union in 1929. He has been in the

purchasing department since 1941, and became assistant general purchasing agent last year. He has an E.E. degree from Rensselaer Polytechnic Institute.

Blackstone Corporation, **James-town, N. Y.**, has named **Douglas E. Benson** as director of purchases. Mr. Benson has been with Blackstone since 1955, as purchasing agent. He is vice president of the Northwestern Pennsylvania Purchasing Agents Association. **Gordon W. Black** was also promoted from buyer to purchasing agent. Mr. Black has been with Blackstone since 1955. Both men are graduates of Allegheny College.

Leont R. Dulaney, Jr. was appointed purchasing agent for **Quick Mfg. Inc.**, **Dayton, Ohio**. Mr. Dulaney, who joined Quick Mfg., Inc. in 1958 has been traffic manager. He attended Dartmouth and U.C.L.A.

Leonard G. Taggart became materials manager in **Stromberg-Carlson's Special Products Division**, **Rochester, N. Y.** In this newly-created position Mr. Taggart will have responsibility for



Leonard G. Taggart

the purchasing and production control functions in the Special Products Division. Prior to joining Stromberg-Carlson Mr. Taggart was division purchasing agent for the Home Products Di-

vision of **Sylvania Electric Products, Inc.** He had been with Sylvania for nearly 28 years, serving as clerk, assistant manager and later as manager of production planning, and as divisional purchasing agent of the Radio Tube Division. From 1948 to 1955 Mr. Taggart was corporate director of purchasing of Sylvania. He attended the University of Pittsburgh.

John J. Rich is the new purchasing agent for the Dearborn, Mich., plant of **American-Standard Industrial Division**.

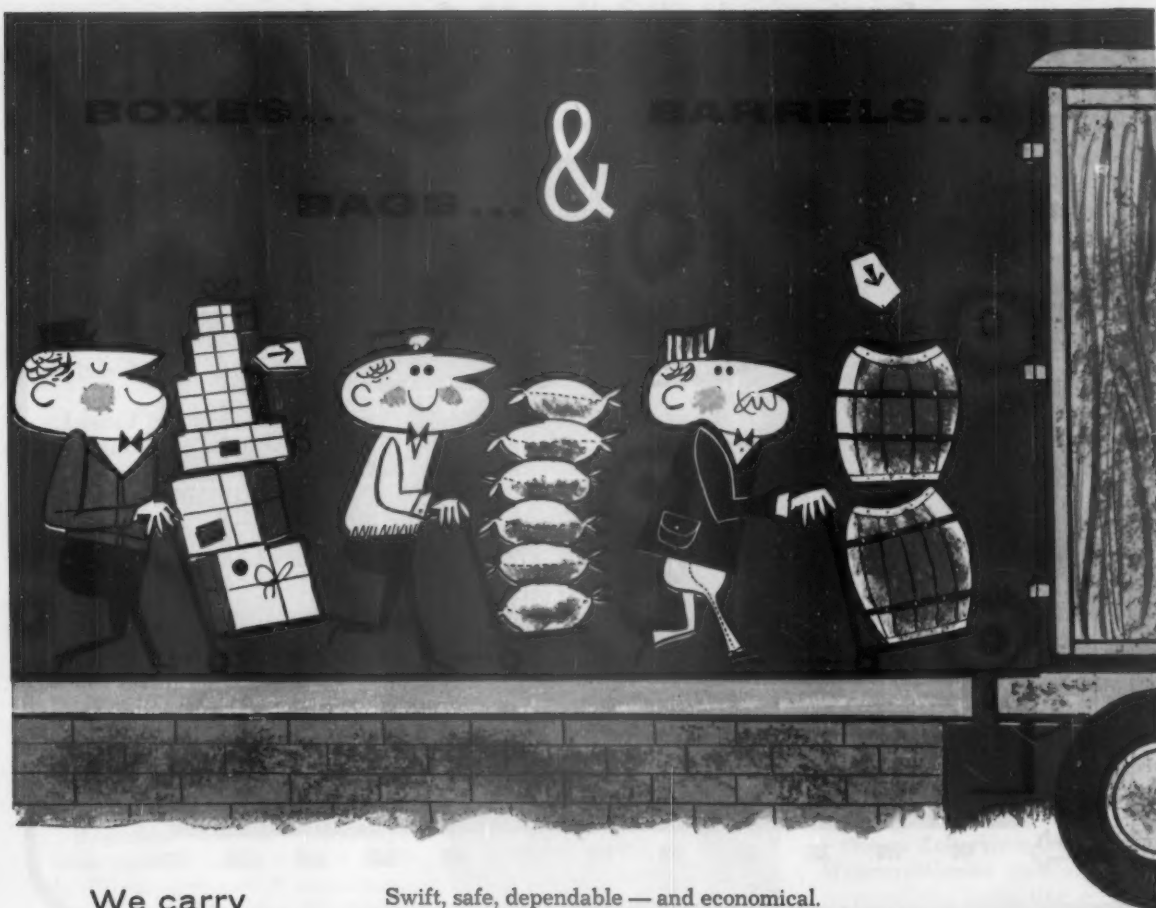


John J. Rich

Mr. Rich comes to American-Standard from **Thompson Ramo Wooldridge** of **Cleveland, Ohio** where he was materials manager. Prior to this, he held similar posts with **Hudson Motor Company** and **Wright Aeronautical Corporation**. Mr. Rich will manage procurement of all materials and equipment used in the Dearborn plant. He is a graduate of **Lawrence Institute of Technology**.

Appleton Machine Company, **Appleton, Wisc.**, appointed **John J. Engel** purchasing agent. Mr. Engel has been with the company since 1953 and has served as assistant purchasing agent for the past six years. He succeeds **O. C. Mead** who is joining a family business. **Kenneth W. Jesse** has been made assistant purchasing

(Please turn to page 55)



We carry
almost
everything
almost
anywhere!



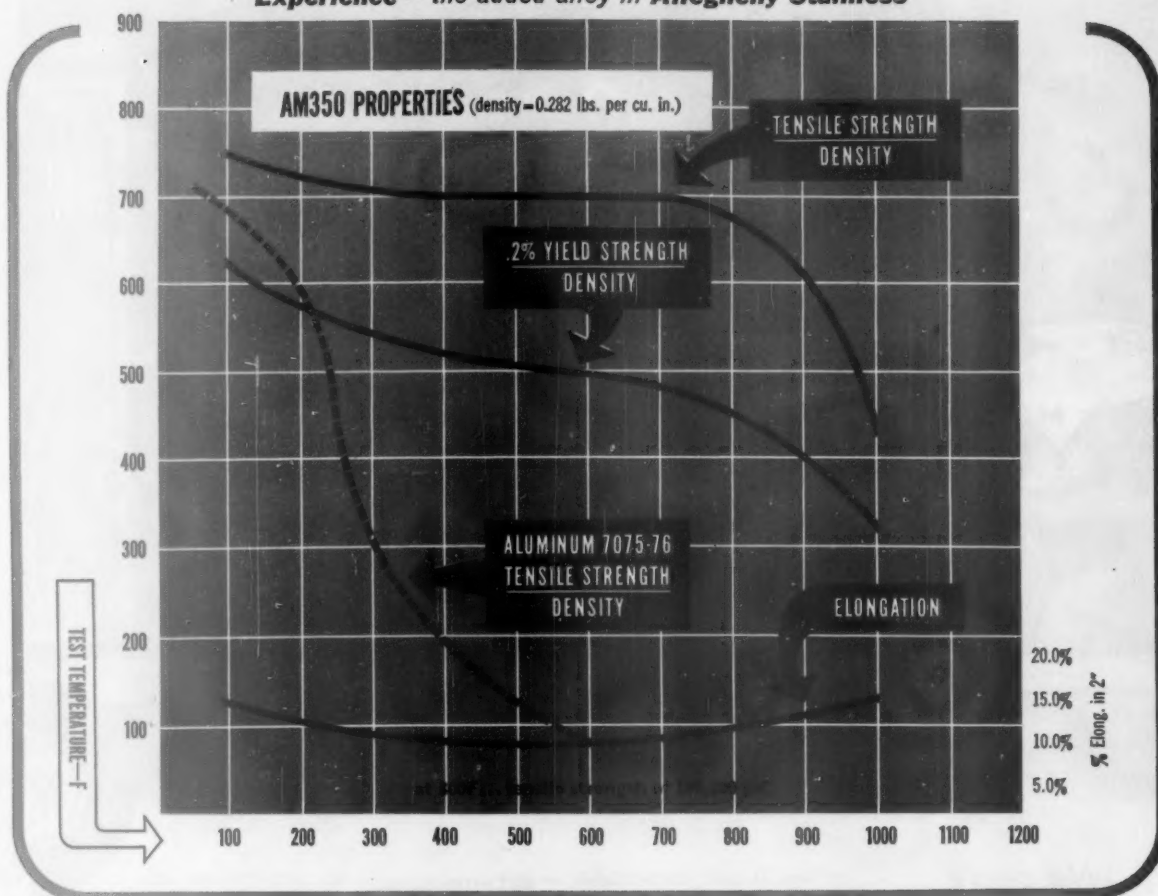
Swift, safe, dependable — and economical.
Serving 9,149 points in 24 states through 78 modern terminals — with special emphasis on small loads to small towns. Our LTL service is exceptional. We offer direct, single-line, "time-tabled" less-than-truckload service to almost every crossroad on the map. Fast coast-to-coast service with our West Coast carrier, Garrett Freightlines, Inc. Direct service to and from Puerto Rico from any Interstate System point via Sea-Land Service of Pan-Atlantic Steamship Corp. Call us the next time you have freight to move within our authority. We're in the Yellow Pages.

MORE THAN A TRUCK LINE...A TRANSPORTATION SYSTEM



GRAND RAPIDS, MICHIGAN Canadian Offices: Toronto, Ont. Montreal, Que.

Experience — the added alloy in Allegheny Stainless



Two for the space age—AL's AM-350 and AM-355 precipitation hardening steels

A unique combination of highly desirable properties describes Allegheny Stainless AM-350 and AM-355 Steels. They combine high strength at both room and elevated temperatures, excellent corrosion resistance, ease of fabrication, low temperature heat treatment, good resistance to stress corrosion.

They are proving the answer to many space age problems. Airframe and other structural parts, pressure tanks, power plant components, high pressure ducting, etc. are all natural missile and supersonic aircraft applications for AM-350 and AM-355.

AVAILABILITY: AM-350, introduced several years ago, is available commercially in sheet, strip, foil, small bars and wire. AM-355, best suited for heavier sections, is available commercially in forgings, forging billets, plates, bars and wire.

CORROSION RESISTANCE: Compared to the more familiar stainless grades, AM-350 and AM-355 resist corrosion and oxidation better than the hardenable grades (chromium

martensitic) and only slightly less than the 18 and 8's. They resist stress corrosion at much higher strength levels than do martensitic stainless grades.

SIMPLE HEAT TREATMENT: High strength is developed by two methods. Both minimize oxidation and distortion problems. The usual is the Allegheny Ludlum-developed sub-zero cooling and tempering (SCT): minus 100F for 3 hrs plus 3 hrs at 850F. Alternate method is Double Aged (DA): 2 hrs at 1375F plus 2 hrs at 850F.

EASY FABRICATION: AM-350 and AM-355 can be spun, drawn, formed, machined and welded using normal stainless procedures. In the hardened conditions, some forming may be done . . . 180 degree bend over a 3T radius pin. Also AM-350 can be dimpled in the SCT condition to insure accurate fit-up.

For further information, see your A-L sales engineer or write for the booklet "Engineering Properties, AM-350 and AM-355." *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa. Address Dept. P-27*

7016

ALLEGHENY LUDLUM

Export distribution: AIRCO INTERNATIONAL

EVERY FORM OF STAINLESS . . . EVERY HELP IN USING IT

For More Information Write No. 193 on Inquiry Card—Page 32

AL

Purchasing People In The News

(Continued from page 52)
agent. Mr. Jesse has been with the company since 1953 and served as expeditor for the production department. **Francis De Young** will replace Mr. Jesse as expeditor. He was the former production router. **Jerome Chosa** will replace Mr. De Young.

Louis J. Saffores has been named assistant manager—purchasing and packaging for the **California and Hawaiian Sugar Refining Corporation, San Francisco, Calif.** A member of C and H since 1939, Mr. Saffores has held administrative posts in purchasing for most of this period. Most recently he was container buyer. He has been active in purchasing and packaging circles and currently is membership chairman of the Northern California Association of Purchasing Agents.

Reynolds Metals Company, Richmond, Va. has named **Earl C. Silver** director of purchases. He succeeds **Matthew W. Henry**



Earl C. Silver

who has retired. Mr. Silver started with former Reynolds subsidiaries in 1931. From then until 1941 he was purchasing agent of the American Thermometer Company in St. Louis. Then he became general purchasing agent for five companies which comprised Reynolds' former thermostat division, with headquarters in Knoxville, Tenn. In 1946 he went to Reynolds' McCook, Ill.,

plant as its purchasing agent. In 1947 he moved to the Richmond headquarters as assistant general purchasing agent. Mr. Silver is an alumnus of Washington University and a graduate of the advanced management training program at Harvard University's School of Business Administration. He is a member of the Old Dominion Chapter of The National Association of Purchasing Agents.

Appointment of **J. G. Yoder** as purchasing agent of **Great Lakes Pipe Line Company, Kansas City, Mo.**, has been announced. Mr. Yoder succeeds **H. F. Swindle**



J. G. Yoder

who retired. Mr. Swindle served as purchasing agent for Great Lakes since 1930. Mr. Yoder has been assistant purchasing agent of the company since 1947. He is a graduate of Ohio State University.

W. O. Buehler has been appointed to the newly created post of superintendent of purchase contracts for **United Air Lines, Chicago, Ill.** Mr. Buehler will assist the vice president-purchasing and stores, and company departments in negotiation and administration of purchase contracts and large purchase orders. He joined United's Flight Operations Department at San Francisco in 1946. During the Korean conflict he administered the airline's

priority system for critical materials. Later he became a buyer in the company's purchasing department at San Francisco. In 1957



W. O. Buehler

he moved to the company's Chicago executive headquarters and the following year was named to his most recent post of superintendent of system purchasing.

Crown Zellerbach Corporation's Western-Waxide division has announced the promotion of **James A. Simpson** from midwest pur-

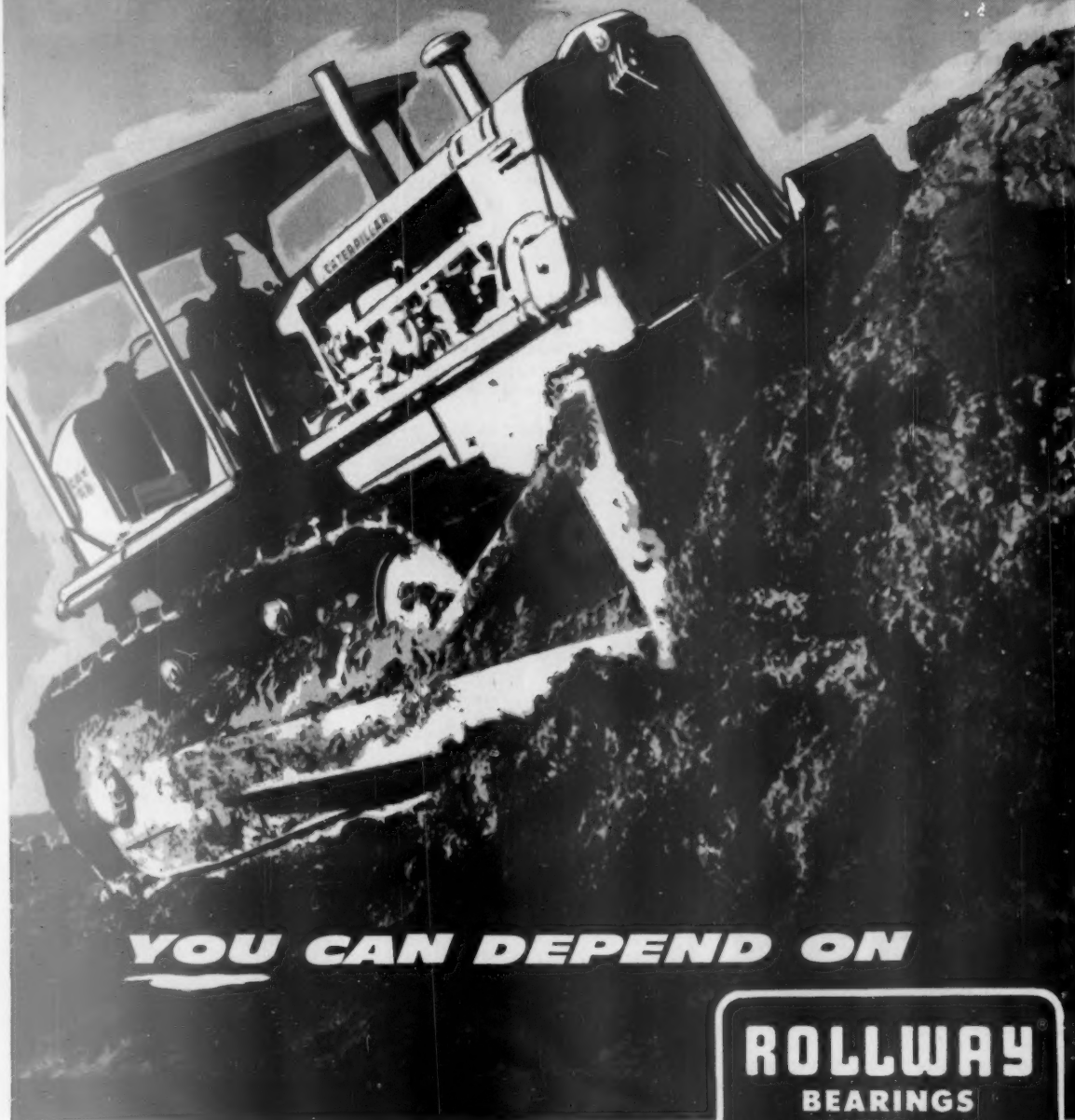


J. A. Simpson

chasing agent to divisional purchasing agent. Mr. Simpson, formerly at the Kansas City office, will now be located at the San Leandro office of Western-Waxide. He joined the division in 1947 as plant accountant in Kansas City.

**SEE PAGE 214 FOR MORE
PURCHASING PEOPLE IN
THE NEWS**

**Where so much
DEPENDS ON SO LITTLE...**



YOU CAN DEPEND ON

**ROLLWAY
BEARINGS**

The rugged Caterpillar crawler Tractor above is depended upon throughout the world to keep the big jobs moving. A single bearing failure can cause costly delays, perhaps endanger job completion in contract time. That's why Caterpillar and other well-

known makers depend in many instances on Rollway bearings in vital spots! Rollway Bearing Company, Inc., Syracuse, N. Y., manufacturers of a complete line of radial thrust cylindrical roller bearings. Write for a complete product line catalog.

ENGINEERING OFFICES:

Syracuse • Boston • Chicago • Detroit • Toronto • Pittsburgh • Cleveland • Seattle • Houston • Philadelphia

Los Angeles • San Francisco

For More Information Write No. 194 on Inquiry Card—Page 32



Rust-Oleum is distinctive as your own fingerprint. Accept no substitute.

... goes on faster, stops rust, lasts longer over rust!

ONE MAN often does the work of two!

Easier to use—because Rust-Oleum 769 Damp-Proof Red Primer goes directly over sound rusted metal after scraping and wirebrushing to remove rust scale and loose rust—usually eliminating costly surface preparations. *Stops Rust*—because the *specially-processed* fish oil vehicle in the 769 Primer penetrates rust to bare metal—helping to drive out air and moisture that cause rust. And it's easily applied by brush, spray, or roller.

Beautifies as it protects—because the Rust-Oleum New Color Horizons System of primers and top coats includes a wide array of smart new colors that resist moisture, fumes, humidity, weathering, etc. Talk to your Chief Engineer—try Rust-Oleum on your tanks, fences, metal sash, roofs, structural steel. See how it lasts and lasts. Consult your Rust-Oleum Industrial Distributor, or write for the New Color Horizons catalog—38 pages, free!

RUST-OLEUM CORPORATION • 2579 Oakton Street • Evanston, Illinois

RUST-OLEUM



RUST-OLEUM NEW COLOR HORIZONS SYSTEM

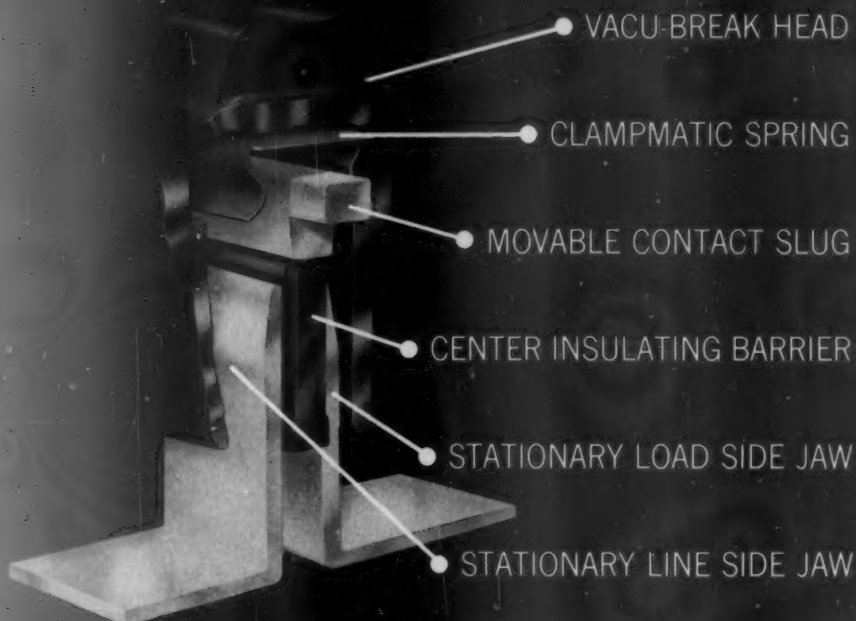
Over seventy colors are included in this unique new system that combines four important points: (1) The ability to Stop Rust, (2) smart, modern color harmony, (3) the durability to last and last, (4) ease of application that saves time, money and metal.

STOPS RUST!

Rust-Oleum and Stops Rust are brand names and registered trademarks of the Rust-Oleum Corporation.

Write for special report showing Rust-Oleum penetration to bare metal.





THE INSIDE STORY...

Why switches last longer with clamped pressure contact and Vacu-Break arc control

This Bulldog Vacu-Break® Switch Head is the reason why Vacu-Break switches stay in action longer.

The unique Clampmatic® spring clamps the contact slug firmly between the line and load jaws . . . provides a virtual bolt-tight connection! This clamped pressure contact prevents overheating while in the "on" position—and as the switch moves to "off," the spring speeds the break. Both features mean longer switch life and improved performance.

Equally important to longer switch life is the action of the Vacu-Break head. Arc chambers enclose the switching contacts. When contacts are broken under load, arcs are smothered quickly. Pitting and burning are cut to the absolute minimum, thereby minimizing maintenance.

Bulldog Electric Products Division, I-T-E Circuit Breaker Company, Box 177, Detroit 32, Michigan. In Canada: 80 Clayson Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N. Y.

For Safety's Sake Buy Vacu-Break



BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY



Vacu-Break switch units with clamped pressure contacts are available in Bulldog Safety Switches, Switchboards, Vacu-Break Power Panels and Bus Plugs. They cost no more and give your customers the maximum in safety and performance. See your Bulldog field engineer.



For More Information Write No. 196 on Inquiry Card—Page 32



How are they doing down on the farm?

Nowadays they're doing everything a lot easier, thanks to modern power-operated farm machinery.

And farm machinery producers have learned that their lot can be a lot easier, too, when they specify Ostuco Tubing. That's because there's no compromising with custom-quality Ostuco Tubing. Consistently you receive the exact tubing you want — the size, length, grade — with the strength and tolerances you need. For machined parts, you get our recommended rough size guaranteed to clean up.

In addition to these advantages, Ohio Seamless will fabricate tubular parts to your specification. Contact your nearest Ohio Seamless representative, or send part drawings to the plant at Shelby, Ohio—Birthplace of the Seamless Steel Tube Industry in America.

A-1356A

Model illustrated built to 3.5 mm scale.



Complimentary Copy of new Bulletin CS60 "Ostuco Steel Tubing" sent on request.



OHIO SEAMLESS TUBE

Division of Copperweld Steel Company • SHELBY, OHIO

Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging

SALES OFFICES: Birmingham, Charlotte, Chicago (Oak Park), Cleveland, Dayton, Denver, Detroit (Huntington Woods), Houston, Los Angeles (Lynwood), Miami, Mobile, New Orleans (Chalmette), New York, North Kansas City, Philadelphia (Wynnewood), Pittsburgh, Rochester, St. Louis, St. Paul, Salt Lake City, Seattle, Tulsa, Wichita

CANADA: Railway & Power Engr. Corp., Ltd.

EXPORT: Copperweld Steel International Company, 225 Broadway, New York 7, New York

For More Information Write No. 197 on Inquiry Card—Page 32

MARCH 14, 1960

For More Information about ad on following page Write No. 198 on Inquiry Card—pg. 32→

PRODUCTION PARTS

A MATTER OF ACCURACY, QUALITY AND SERVICE



Whatever your end-product—power mower or guided missile—producing it at less cost can depend on selecting the one source for component parts and assemblies that offers the right combination of accuracy, quality and service.

As a specialist in volume production of precision parts, Ex-Cell-O has the manpower, the equipment and the manufacturing experience to meet your requirements with target-date delivery of precision-machined production parts of any size or shape, any metal or finish, in any quantity you specify.

Find out from your local Ex-Cell-O Representative just how quickly and economically Ex-Cell-O's extensive product design, development and manufacturing facilities can be geared to your precision production parts requirements.

Call him today. Or if you wish, send your print or specifications directly to Ex-Cell-O for a prompt quotation. Ask for Bulletin 365912.

XLO EX-CELL-O FOR PRECISION

EX-CELL-O
CORPORATION
DETROIT 32, MICHIGAN

59-62

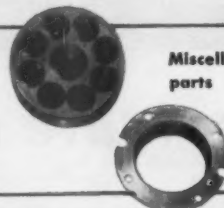
EX-CELL-O PRECISION PRODUCTS INCLUDE: MACHINE TOOLS • GRINDING AND BORING SPINDLES • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • TORQUE ACTUATORS • THREAD AND GROOVE GAGES • GRANITE SURFACE PLATES • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

Aircraft parts



Ground worms

Miscellaneous parts



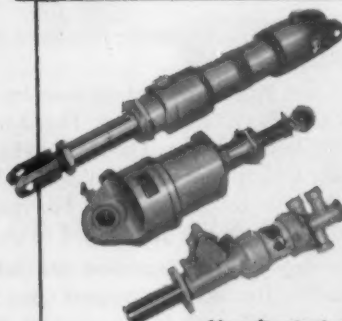
Drill jig bushings



Production parts



Aircraft actuators



Machined forgings



Fuel nozzles



Railroad details

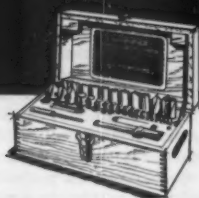


Jet blades, rotors



Cost-Cutting

A SIMPLE MATTER OF SELECTION



COUNTERBORE SETS



INVERTED SPOT
FACERS



COUNTERBORES—

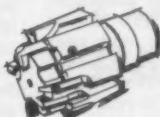
COUNTER SINKS,
HOLDERS, PILOTS



FLOATING TAP
DRIVERS



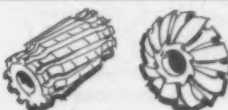
INSERTED
BLADE
FACE MILLS



MULTIPLE
DIAMETER
BORING
CUTTERS



GROUND MULTIPLE
THREAD MILLING CUTTERS



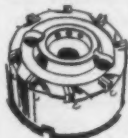
GROUND AND UNGROUND
FORM-RELIEVED CUTTERS



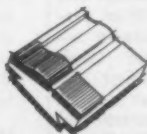
SINGLE-POINT
CARBIDE TIPPED TOOLS



MULTIPLE STEP
BORE REAMERS



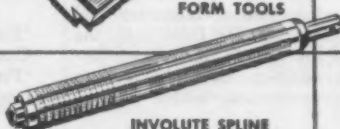
CARBIDE
TIPPED
CYLINDER
BORING CUTTERS



DOVETAIL
FORM TOOLS



CARBIDE
TIPPED BROACH SECTIONS



INVOLUTE SPLINE
SHELL TYPE BROACHES

Every standard and special tool is of but one quality—the finest available. Since 1921, Continental has specialized in cost-saving cutting tools (just a few of which are shown at left), producing design innovations in hardened, high-speed tool steel, carbide and special-alloy cutting materials.

Available in the types and sizes required to do the complete job from rough to finish, Continental Cutting Tools are job-tested in the toughest proving ground—Ex-Cell-O's own machine tool and precision parts production lines. As a result, they come to you ready to increase the output of even your best machines!

Continental engineers will be glad to work with you in selecting the correct CTW Cutting Tool for long life and maximum performance. See your local Ex-Cell-O Representative, or write direct to Continental Tool Works Division for full details. In Canada, contact your local Ex-Cell-O Sales Associates Representative or write direct to Colonial Tool Co., Ltd., Windsor.

Continental **MMT=PE**
TOOL
WORKS

DIVISION OF

EX-CELL-O
CORPORATION
DETROIT 32, MICHIGAN

Odd shapes ...and all sizes with Hindley Cotter Pins



Many unusual cotter pin shapes in hard-to-get metals are stock items with Hindley. Uniform precision manufacture pays off in faster assembly. Write for folder.



Hindley Manufacturing Co., Cumberland, R. I.
Wire Hardware • Cotter Pins • Plumbing Specialties

For More Information Write No. 199
on Inquiry Card—Page 32

FOB—"fillosophy of buying"

Ordinarily, this column deals only with the lighter side of life in general, and purchasing in particular. We depart from our usual practice in this issue, however, to bring you an exchange of correspondence that should be of great importance and interest to everyone engaged in purchasing. The first letter, from a prominent attorney, appeared in the *New York Times*. The reply that follows was sent to him and to the *Times*.

TO THE EDITOR OF THE NEW YORK TIMES:

"The current payola probe has its justification in the Congressional investigation of the operations of Federal administrative agencies; in this case, the Federal Communications Commission. It would be unfortunate, however, if this inquiry into corrupt practices in the entertainment field should divert attention from the prevalence of corrupt practices throughout American industry.

"It is clear to the writer that kickback plays a predominant part in determining who will purchase what from whom and at what price.

"In the course of research in the field of commercial bribery many thousands of instances of payoffs from manufacturers and suppliers of services to purchasing agents and others having authority to contract for their employers have come to light. These practices are not limited to any one industry. In many cases the kickbacks amount to sums far greater than those testified to in the current 'payola' investigation.

"Fortunately, there are some exceptions. A number of large American corporations have realized that such practices are fraught with evil and represent a danger to their own organizations as well as to American life generally. They have undertaken, therefore, vigorous action to root corrupt employees out of their own companies. Included among the procedures adopted have been the issuance of clear written instructions to purchasing agents as well as to suppliers, prohibiting the giving or acceptance of any gratuity whatsoever.

"Where violations of these instructions have occurred, swift action has followed, including discharge from employment, termination of business relationships with the supplier (such economic ostracism often being the most painful punishment that can be administered to one in business) and legal action to recover from both the briber and the bribed the moneys involved. In addition, there have been criminal prosecutions, where appro-

priate, under the laws of the eighteen states which presently have statutes prohibiting commercial bribery.

"The combined efforts of American business concerns are required to stem the growing tide of corruption. This conclusion is borne out by the experience of the Bribery Prevention League of Great Britain, supported by leading industrial and commercial firms in that country. Its efforts have contributed in large measure to the higher standards of morality in business and public life there.

"It is essential to note, however, that commercial bribery practices are not restricted to dealings between business concerns. They exist on a large scale in dealings with the United States Government. Suppliers doing business with the Government have frequently paid off military procurement officials and others. It seems rather strange that a Congressional committee should conduct an investigation of kickbacks paid in the entertainment field yet leave untouched, for the most part, the problem of more grievous practices of the same kind with respect to employees of the Federal Government. True, there have been investigations from time to time into corruption of Government employees. But there has been no attempt to clean house within the Government."

HERBERT ROBINSON.

Purchasing Magazine's Reply:

Dear Sir:

The human condition being what it is, payola will be with us always in one form or another. As long as men have bought and sold goods both buyer and seller have been tempted (alas, too often, too successfully!) to give and accept bribes. Even the Mother Superior of a midwestern Catholic hospital felt compelled recently to warn institutional purchasing agents against being influenced by suppliers' gifts of radios, TV sets, and the like to the institutions.



"I'm from the Duplo Carbon Paper Company."
"I'm from the Duplo Carbon Paper Company."

But to charge, without offering proof, that business and governmental procurement is riddled with commercial bribery, as Herbert Robinson did in his letter of February 18, is to distort the picture completely. Morality aside, it is just bad business to let kickback play "a predominant part in determining who will purchase what from whom and at what cost." To justify his position in the eyes of management and the other departments of the company, the modern industrial purchasing agent must make his decision to buy on the basis of quality, service, and price alone. It is simple economic law that payola—which is an expense to the supplier giving it—will be reflected in a higher price, lower quality, or poorer service. Among the more flagrant dispensers of payola, all three elements are adversely affected, as many buyers have learned to their regret.

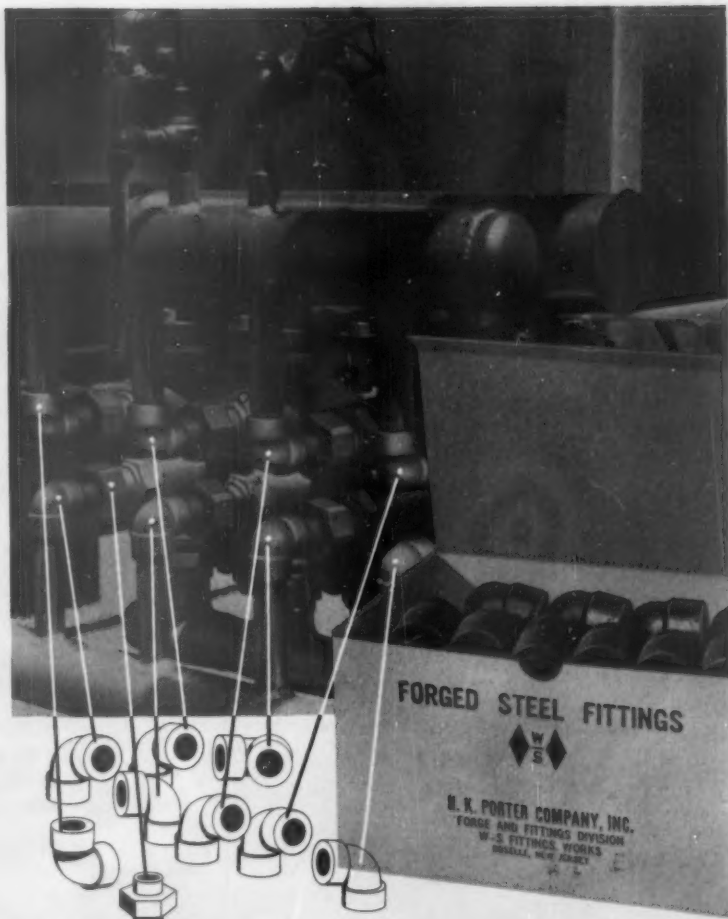
My personal observation during 13 years in the field is that very few purchasing agents in our highly competitive industrial economy can afford to let favors from suppliers affect their buying judgment.

This view is supported by the statements and actions of industrial purchasing agents. The 18,000-member National Association of Purchasing Agents has opposed commercial bribery throughout its 50-year existence and includes a prohibition against accepting gifts from suppliers in its code of ethics. In the many surveys we have taken among 28,000 purchasing agents throughout industry, the majority have inevitably condemned the practice and expressed a hope that it could be abolished. Consistently, they have pointed out that acceptance of substantial gifts is not only bad economics but bad ethics. This reaction has come not only from the large companies but from those with very small purchasing departments.

Although my experience with government purchasing agents is less extensive, it is sufficient for me to say that Mr. Robinson is just as general, and inaccurate, in charging that commercial bribery exists on a large scale in government buying. Government buyers are not only restrained by the laws of economics; they are so hemmed in by rules, regulations, and the necessity for checking everything out with their immediate superiors that it would be an extremely clever man indeed who could get away with enough graft to make it worth the effort.

Corruption there is, and always will be. But the "growing tide" that Mr. Robinson speaks of has been held back in industry. And not a little credit for the relatively good moral climate in industry belongs to the professional purchasing agent who, in his efforts to improve his own status as a business executive is making the practice of commercial bribery unprofitable and therefore unpopular.

Cordially yours,
Paul V. Farrell
Editor
PURCHASING MAGAZINE



FORGED for long life PACKAGED for convenience

The "Forged" in W-S Forged Fittings means dependability under the toughest piping-job conditions. "Forged" gives you the added resistance to pressure, heat, corrosion, shock and vibration needed to make your installations long-lived and safe. And W-S Fittings are easily installed, with tight fits and perfect alignment... thanks to W-S precision machining methods and quality forging techniques.

Packaging, too, is a W-S brand advantage. Virtually any "mix" of fitting types and sizes can be packed in a convenient W-S Case or Half-case... each type and size in its own carton.

Specify W-S on your next order. For specifications and Distributor locations, write *Forge and Fittings Division, H. K. Porter Company, Inc., Box 95, Roselle, New Jersey.*

FORGE AND **PORTER** FITTINGS DIVISION

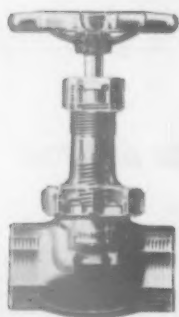
H. K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACATORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION, H. K. PORTER COMPANY DE MEXICO, S. A.; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepocut" Systems—
H. K. PORTER COMPANY (CANADA) LTD.

For More Information Write No. 200 on Inquiry Card—Page 32



**The LUNKENHEIMER Valves in your competitor's plant are
the valves that cost you most!**



L-450-6A

- BRONZE
- IRON
- STEEL
- PVC



With quality Lunkenheim Valves in his plant, your competitor enjoys far fewer leakage, production and maintenance losses. Thanks to these savings, he lowers his manufacturing costs . . . and makes more profit. Why give him this important advantage? Install Lunkenheim Valves . . . famous for quality and performance for nearly a century. The Lunkenheim Co., Cincinnati 14, Ohio.

You can't find the cost of a valve on a price list.

LUNKENHEIMER®
THE ONE *Great* NAME IN VALVES

For More Information Write No. 201 on Inquiry Card—Page 32

PURCHASING

In Purchasing . . .



ARE YOU in the habit of issuing purchase orders with vague or incomplete specifications? Do you regularly send out unpriced orders? Probably not, if you're at all experienced and conscientious. Yet thousands of P.A.'s are doing the equivalent by casually leaving it up to the vendors to ship their orders "best way." By failing to give transportation the attention it deserves, they are letting unnecessary cost push up the purchase price of the commodities they buy.

How to get more value from your transportation dollar is the theme of the entire major editorial section in this issue. Our editorial staff and a group of outside traffic experts have analyzed traffic and its relationship to purchasing in a group of articles that will be helpful to any purchasing agent—whether he's his own traffic manager or has access to a full-scale traffic department. Starting on page 70, and going right through page 91, is the latest, most authoritative data on these important subjects:

What Transportation Means to Purchasing; How Purchasing and Traffic Can Cooperate to Cut Costs; How to Choose A Carrier; Tips on Cutting Transportation Costs; Transportation Buyer's Guide; How to Get Outside Help on Traffic; Legal Aspects of Transportation.



If you've been feeling smug about the disk jockeys and their payola scandals, stop now. It's becoming increasingly clear that a good part of the public believes that giving and taking graft is rampant throughout all businesses. Furthermore they're putting the finger on the purchasing agent as No. 1 grafter in the land. The situation is unpleasant but it won't be cleared up either by indifference or outraged denials.

Editor Paul Farrell takes a frank look at the problem in both F.O.B. (page 58) and the Editorial (page 67) and comes up with a sound defense and some interesting suggestions. And several hundred of your fellow P.A.'s sound off on some aspects of the problem in our latest Purchasing Opinion Poll (which incidentally produced the greatest response we have had since the Poll was first established 13 years ago.)

Interest in our May 23 Value Analysis Issue is running high. The issue will feature the role of purchasing and purchase analysis in the success of the Ford Falcon. This will be one of the outstanding purchasing stories of the last decade. Be sure to watch for it.

Ray Richards
Ray Richards
Publisher

You get **MORE**
for your money with
WAVERLY

Hi-Dri

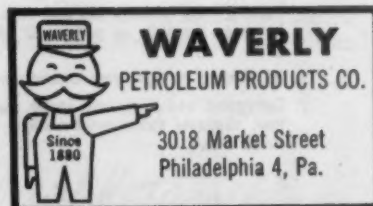


• **MORE COVERAGE**—by actual test, **WAVERLY HI-DRI** will cover up to 33⅓% more floor space than competitive products.

• **MORE ABSORPTION**—**HI-DRI** is thirstier than ordinary absorbents. In every 50 lb. bag, there are more than 37 million highly absorbent granules—to soak up oil and grease faster.

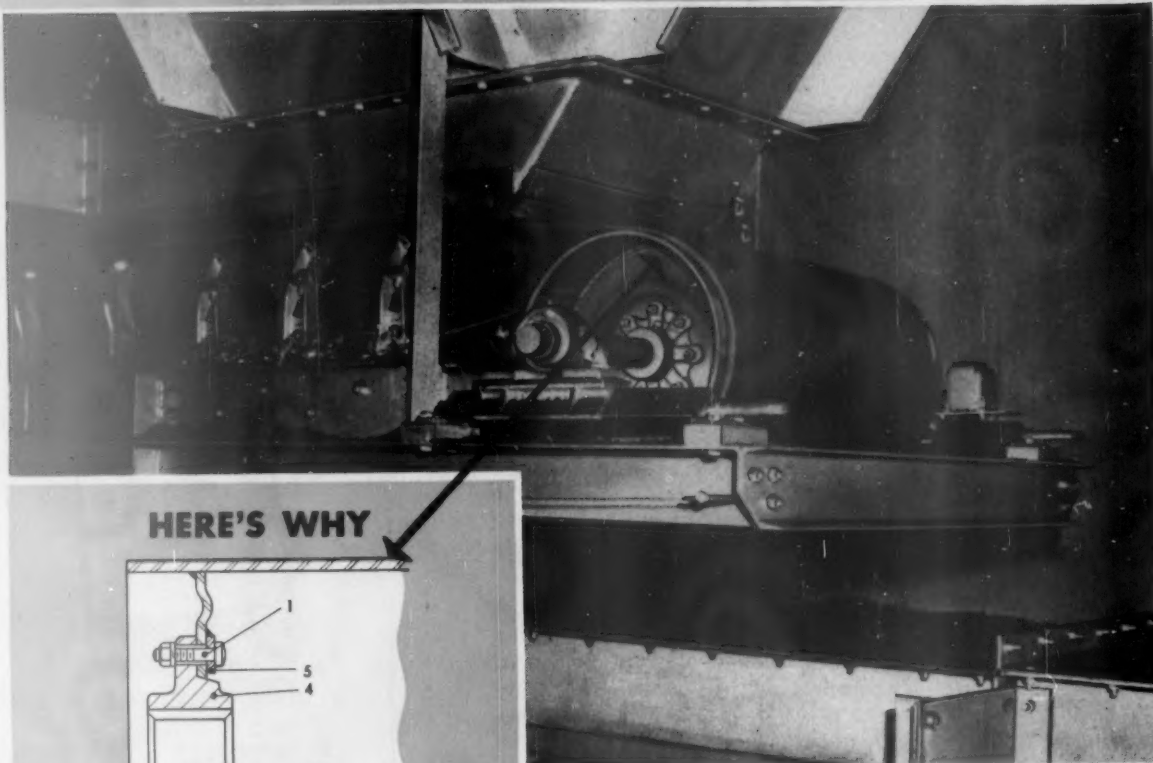
• **MORE SAVINGS**—because **HI-DRI** goes further and works harder than other products, you save up to one-third of your costs.

• **MORE SATISFACTION**—and you can prove it! Test **HI-DRI** in your own plant. Call or write for a generous **FREE** sample.

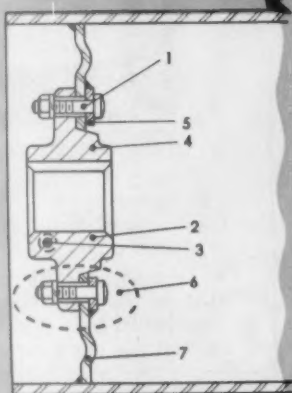


For More Information Write No. 202
on Inquiry Card—Page 32

American Conveyor Pulleys save you money! Largest tonnage-dollar factor in the industry



HERE'S WHY



1. Long, high-tensile bolts store tension to keep nuts tight, hubs permanently in place; bolts do not carry load.
2. Hubs are saw-slit through one side to provide Wedg-Tite clamping action; they grip the shaft with a bulldog-like grip.
3. Cross-clamp bolts provide insurance that the hub will remain securely and permanently clamped to the shaft.
4. Massive hubs provide strength to withstand extreme loads.
5. Backing rings reinforce the end discs and reduce forces on the bolts on pulleys 10" diameter and up.
6. No welding in high-stress concentration area.
7. Corrugated end-discs, and clover leaf hub contour, eliminate stress concentrations in the high stress area.

\$307.74* was saved on this installation on head and tail pulleys, shafts and bearings for a 48" belt conveyor moving 175 tons of coal per hour.

To figure the savings you can make on your installations, get a copy of the American Conveyor Pulley Catalog and engineering bulletin CP-47. Ask your American Distributor or write for your copy.



*Published Consumer Prices



**POWER
TRANSMISSION
DIVISION**

THE AMERICAN PULLEY COMPANY

4200 WISSAHICKON AVENUE • PHILADELPHIA 29, PA.

For More Information Write No. 203 on Inquiry Card—Page 32



The Facts About Graft

PURCHASING MAGAZINE
MARCH 14, 1960

ALL BIG CORPORATIONS use payola."

"The current payola scandal points out the underlying dishonesty in too many big corporations."

These chilling observations didn't come over Radio Moscow or from a soapbox orator in Union Square. They were made by American teen-agers in the Detroit area who were polled recently on their reaction to revelations of payoffs to disk jockeys. And the sentiments were repeated by hundreds of other children participating in the survey.

Now this is not a signal for either denouncing the youth of America as a bunch of addle-pated, cynical young radicals, or for going into a breast-beating dirge about the decline of everything. But it is a sign that the public's image of the business world is a pretty grubby one, pockmarked with bribery, kick-backs, and general corruption. Nor is that view limited to naive and impressionable youngsters. The letter from a prominent attorney quoted in F.O.B. (page 62) shows that it is held by responsible, mature people as well. And the worst villains in their eyes, as the attorney's letter indicates, are the purchasing agents of industry (and the sly suppliers that corrupt them.)

From all indications, the assaults on the reputation of the purchasing agent will increase. This means that all of us must keep at the tiresome job of firing facts back in the face of those misinformed or malicious people who are leading the attack. The facts are these:

—A certain amount of graft, payola or what have you will always exist in industry until buyers and sellers are replaced by machines—or angels. But the unethical purchasing transactions that take place are outnumbered many millions of times by purchases made solely on quality, service and price.

—Where graft does exist, usually more than one person has been tarred by the same stick. The fight against commercial bribery has been most successful in precisely those companies where purchasing has been given professional status and the authority and responsibility that go with it. It is easier to spot and punish dishonesty in such a situation, as occasional miscreants in industrial purchasing departments have found to their sorrow.

—If a buyer's moral sense doesn't tell him that accepting lavish gifts or entertainment is wrong, his economic sense will. The cost of that kind of payoff inevitably ends up in the suppliers' prices. Few buyers relish the idea of trying to explain payola-padded prices to management.

Are you sure of your facts? If you are, keep firing them back whenever you see or hear anything that doesn't jibe with them.

Paul V. Farrell

METALOGICS*

perks up
your profits with
top technical help

Looking for materials to do it better? Time- and cost-saving fabrication methods? Solutions to "cost of possession" problems? Answers to these and other important questions are yours for the asking when you rely on Ryerson. Metalogics brings you the counsel of experienced specialists in steel, aluminum, plastics, and metalworking machinery... and the benefit of their nationwide, daily experience with a wide variety of problems.


But that's only part of the exciting Metalogics story—get the rest from your Ryerson representative soon.

* The Ryerson science
of giving optimum value
for every purchasing dollar.



STEEL • ALUMINUM • PLASTICS • METALWORKING MACHINERY

RYERSON STEEL

Joseph T. Ryerson & Son, Inc., Member of the  Steel Family

PLANT SERVICE CENTERS: BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • HOUSTON • INDIANAPOLIS
LOS ANGELES • MILWAUKEE • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • SPOKANE • WALLINGFORD

For More Information Write No. 204 on Inquiry Card—Page 32

FAST FREIGHT PAYMENTS—Chase-Manhattan Bank of New York offers industrial customers a plan for prompt payment of freight bills that cuts accounting and mailing costs. The customer deposits an agreed sum with the bank, and carriers deposit freight bills for credit to their accounts. The bills are charged to the customer's account, stamped "paid" and mailed daily to its accounting department. The bank makes no charge to the customer, but collects a small fee from the carrier for the service.

ROTATE VALUE ANALYSTS—Electro-Motive Division, General Motors uses an unusual approach to value analysis. One buyer at a time is designated value analyst. After he has had a tour of duty in the job, he is moved to a different buying job than he had before, and another buyer takes over the value analyst's job. The rotation scheme has two advantages: a fresh slant is regularly brought into value analysis, value analyzing work sharpens buying skills.

CENTRALIZE P.O. DATA—Most purchase orders are designed like letters—inside address, body (description of part), and signature. As a result, essential data is spread all over the lot. Investigate the trend to a more efficient form of P.O., with address, shipping information, signature, etc., all above the description area. This makes for easier handling of the order, both by your own department and your suppliers.

DO YOUR FRIENDS KNOW YOU?—Welcome leaflets, complete with buyers' photographs, maps of the purchasing department, etc. have helped many P.A.'s with their outside public relations. But how many people in the plant know who's who in purchasing? If you have a welcome booklet, send a copy to each department head and each requisitioner, at least. It will help both you and them.

KEEP YOUR ENGINEERS INFORMED—Engineers need economic information on relative costs and their effect on new designs. When they have to get this information from vendors, back door selling and restrictive source selection inevitably result. You can help your engineers and beat the back door selling problem by sending them regular bulletins on price information, market conditions, and other economic data. If they can get this material regularly, with a minimum of red tape, they won't have to depend on vendors.

DON'T KEEP SECRETS—Many P.A.'s, active in N.A.P.A. work, use association letterheads without indicating where replies should be sent. Recipients of their letters have to dig through files, directories, membership lists, etc. to find out where to direct answers. If your association letterhead doesn't list your company name and address, have your girl type it in at the bottom of the letter.



TRANSPORTATION:

Another Challenge For Purchasing

ANY TOP MANAGEMENT would take a dim view of buyers who regularly pass up cost reductions of two percent or more on their purchases.

Yet that is exactly what is happening today in company after company, and in the majority of cases it's management's own fault. Where the purchasing man is to blame, he can usually claim extenuating circumstances.

These losses by default are being suffered in one of the most important, and most neglected, "commodities" industry buys—transportation. Traffic management is considered—as purchasing was for so many years—strictly a service function, whose contribution to company profits is vague and indefinable. In some companies traffic doesn't even exist as a specific activity.

This neglect of traffic is not, of course, universal. Hundreds of large companies have imposing traffic organizations—which are presenting their managements with imposing savings every day. But even the enormous amounts these companies save on transportation are only a small part of the \$15-20 billion traffic bills of American and Canadian industry.

What's behind this neglect of traffic, and traffic costs? Inertia, mainly. The age of high speed transportation has come on us so fast that we just haven't caught up with it yet. Only 15 years ago, an otherwise intelligent eastern purchasing agent was heard to remark, "Why should I be interested in West Coast suppliers? The industrial boom out there was just a wartime flash-in-the-pan. I'll stick with my local suppliers who'll stand by me when things get tough."

Sales and marketing managers, in general, took the same view. Only the foresighted saw the revolution in transportation that was taking place. The others figured to stay with their "local" customers.

But all that changed almost overnight. The industrial boom lasted and put down roots in all parts of the country—on the West Coast, in the Southwest and the Southeast. High speed

trains, super-highways, and jet-powered planes brought distant customers and suppliers to each other's back doors.

The purchasing agent who expected the West Coast to fold up quietly, industrially speaking, is getting regular deliveries from half a dozen suppliers in California. He's also buying in Dallas, Jacksonville, Berlin and Tokyo.

Only when these dramatic changes had come to full bloom did many companies realize the importance of a scientific approach to the many complexities of moving goods around the country. It began to dawn on management that freight charges represented a large part of the cost of products bought and sold; that branch warehouses had to be built and supplied; that packaging and methods of shipment were of great importance to customers; that the location and shipping facilities of a supplier might be the deciding factor in whether he got the business. To top it all, transportation costs kept climbing steadily.

Traffic Comes Into Its Own

"As markets began to shrink and customers became more demanding," says the National Industrial Conference Board, "many companies that had never previously given traffic much thought realized that this function now was a major factor in over-all business success. They found that the good will generated by prompt and courteous handling of shipments offset, to some extent, the irritation of rising costs and often influenced the customer's decision in placing the order . . . Many companies took an acute interest in transportation costs. In many instances, new and cheaper methods of shipment arose from careful studies of shipping methods and rates. Similar studies revealed less costly sources of supply for raw materials and components, thus reducing production costs and permitting deeper penetration into competitive markets."

Traffic has still a long way to go to get full recognition of what it can do for a company. But it has a natural ally in purchasing. Both can be money-making activities if given proper authority.

Leaving aside the question of outbound shipments, consider how much traffic assistance a purchasing department must have regularly if it is to get full value in its buying. The Conference Board (*Studies in Business Policy No. 45, Industrial Traffic Departments*) lists these things traffic can do for purchasing:

Supply routes and rates for inbound shipments; furnish information on routes, rates, classifications for potential suppliers; secure rate adjustments; trace, expedite and reconsign shipments; give advice on the most economical size of orders; pool inbound shipments; audit freight bills; warn of impending changes in freight rates and classifications; file claims for loss and damage on inbound shipments; furnish information on competitors' freight rates; establish exceptions ratings.

In general, purchasing faces one of three situations in regard to traffic in its own company: there

will be a separate traffic department already in operation; traffic will be a part of the purchasing organization; there will be no formal approach to traffic management at all.

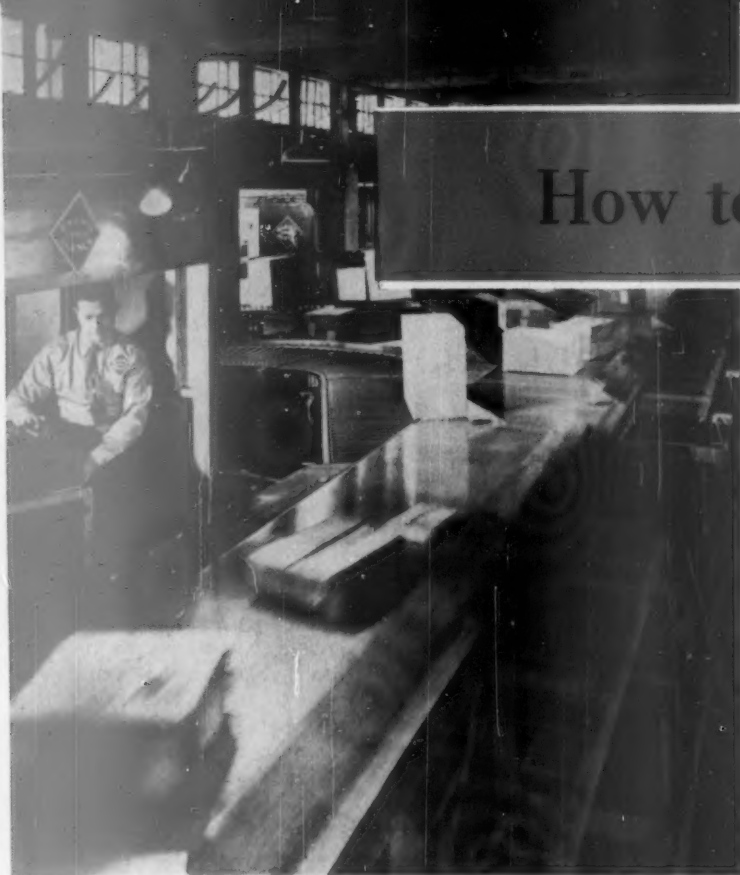
In all cases, purchasing's obligation is clear. It is to promote better understanding and recognition of traffic. Working for and with traffic is relatively easy when a good traffic department is already in existence. But that cooperation does not occur automatically. A traffic department's primary concern is usually with outgoing shipments, since that is where the bulk of the transportation dollar is being spent. But it will respond promptly to requests for help from purchasing in those areas where it has expert knowledge, as listed above.

Having purchasing and traffic in one department is theoretically an ideal arrangement for keeping transportation costs down. But even where it has been given separate status, traffic often suffers from the assorted ills of a department on the way up—shorthandedness, excessive detail, the seeming indifference of people in other departments. Purchasing agents who are responsible for traffic owe it to themselves to see that the function is handled by an experienced specialist who has all the help he needs and the freedom to work on genuinely fruitful cost reduction projects. The traffic manager (or in so many cases, clerk) who spends most of his time working on rail and air tickets for the sales department doesn't have much chance to exploit the creative side of his job. That kind of transportation is important, of course. But it can be handled by a clerk. A real traffic manager should spend his time on that part of transportation that can bring the biggest returns—changes in classification, improved routing, more selective choice of carriers, etc.

There Was Wild Confusion

Purchasing's biggest challenge in respect to traffic comes in those companies where there is no direct responsibility for traffic. The responsibility may be spread out among purchasing, sales, and accounting. Accounting generally audits freight bills, but has neither the time nor the authority to "negotiate" for better rates. Everyone's responsible and no one is. And thousands of dollars are spent needlessly. (Ralph Wilgus, director of traffic for Carrier Corporation, recalls the Philadelphia firm that had 110 major vendors who were using 90 carriers. When a traffic expert went to work on that mess, the number of carriers was reduced to 10, wild confusion at the receiving dock was eliminated, and tremendous savings were made.)

It is in such situations that the purchasing executive can petition management to set up an organized traffic section, preferably in the purchasing department since transportation is a purchased "commodity" just as raw material, equipment and supplies are. But whether it is placed under purchasing or not, traffic management should be made a specialized activity. Purchasing has a big stake in seeing that it is. ► END



How to Cut Traffic

By W. H. Pritchard

Selection of a carrier should be left to experienced "buyers."
In its daily contacts with carriers, traffic learns to rate its vendors according to price, quality, and service, just as purchasing does.

PURCHASING can buy without traffic—and many purchasing agents do just that. But what are they gaining? The money saved on a good buy is often less than what could have been saved through closer attention to transportation costs.

A good buy isn't really good until you've cut every penny of waste from the cost of getting the goods into your plant. It makes little sense to save a dollar on the purchase price of materials and then lose it through not taking advantage of proper routing.

There's one simple reason why purchasing and traffic must work together: they both buy. Purchasing buys material and services, traffic buys transportation. They are the only two divisions in a company that buy—and unless they cooperate, the company

is not getting a hundred cents' worth of value from every dollar it spends.

There are specific ways in which purchasing and traffic departments can combine their efforts to save. A number are discussed below. They relate to situations where there are separate organizations for each function. But the basic principles involved apply whether the traffic problem in your company falls on a 10-man department, or on a one-man purchasing department, or on nobody. Someone is spending money on traffic in any case. Why waste it, when a little attention to these suggestions will help you save it?

✓ **Spell out traffic requirements on purchase orders.** We at K&T worked closely with traffic in designing our purchase order.

Three possible destination points in the Milwaukee area are printed clearly at the top left of our order in a box outlined in

red. We check the address to which the order is to be shipped. In the upper right hand corner—equally prominent—is the statement that a packing list is to be included with each shipment. Elsewhere on the face of the order are boxes in which we indicate goods are to be shipped F.O.B. our plant, vendor's address, or other shipping point. The first four paragraphs of our terms and conditions are strictly of traffic origin. A purchase order has many functions—and getting the material specified thereon into our plant properly—in accord with Traffic's wishes—makes money for our company.

✓ **Build your store of traffic information on rates, classifications, etc.** Traffic has given our Purchasing Department instructions showing the advantages by weight categories on shipments from certain points. These may indicate that motor carrier is the most economical as well as the fastest

Mr. Pritchard is Purchasing Agent for Kearney & Trecker Corporation, Milwaukee, Wis. This article is adapted from an address he made to the Middle West Shipper-Motor Carrier Conference.

Costs

Purchasing and traffic—both buyers—make a formidable profit team when they work together. Here are specific ways they can use each other's know-how to get more value for the transportation dollar.

transportation. From other points, water or rail may be the best, or air freight will do just as much for us as air express and cost less. Traffic fills us in on the advantages and disadvantages of parcel post. So our buyers are constantly aware of what is good and what is bad transportation in each circumstance. This kind of help from traffic greatly reduces the number of corrected routings traffic suggests to purchasing after they examine our orders.

Many traffic departments have developed rate comparison charts for buyers. The rates shown apply between the home office and the cities where most of purchasing's business is placed. These charts show the weights, available methods of transportation, and applicable costs. They are for normal cases only. Traffic's further recommendations on routings, classification designations, etc., are needed in unusual situations. However, they are a guide as to what is apt to be the most economical routing. Buyers can at least exercise judgment in specifying how shipments should be made when they phone in rush orders or place normal orders for items in quantities too small to interest traffic.

✓ **Try to have all shipments made F.O.B. the supplier's plant.** At our plant it is traffic's responsibility to route all outbound shipments unless our customer supplies the routing. But on inbound shipments, whether F.O.B. our plant or F.O.B. shipping point, it is our money that is being spent—openly when F.O.B. shipping point or hidden in the cost of the product when F.O.B. our plant. I prefer that all volume shipments be F.O.B. shipping point.

With title passing to us when the goods are turned over to the carrier, our Traffic Department can specify the most suitable route. He can work on a better commodity rate if volume warrants. We can trace and expedite better. We know the carrier and he will work for us because he was our choice and not the vendor's choice. F.O.B. shipping point means we can have stop-off privileges and perhaps gain a truckload or carload rate before the shipment reaches our plant. We can consolidate or pool our incoming needs. And I know my supplier's price is not reflecting unusually high transportation costs for his protection and at our expense. Buying F.O.B. shipping point has many profit advantages for a company. But this profit can only be gained through close traffic-purchasing cooperation.

✓ **Routing is important: let experts do it.** We estimate that fewer than 40% of our orders in dollars are shipped to us from plants having "established" traffic departments. Sixty percent of our suppliers are small and presumably delegate traffic responsibility to untrained men. If our traffic department didn't control our incoming routings we would pay for their inefficiency regardless of F.O.B. point. Therefore, if our buying is to be efficient, our traffic department must assume responsibility for proper and economical routing and they can only do it with our order copy. It is certainly expecting too much of an untrained shipping clerk at the point of origin to consider which carrier going to Milwaukee will give the best service—with a minimum of time in transit—through routes, transfer eliminations, etc.

Recently we experienced this situation. We expected a shipment from a city approximately 25 miles from Detroit. We asked them to ship a certain way which would have circumvented Chicago and put the goods at our plant the next day.

Their shipping clerk did not follow our instructions and called a local firm which took the shipment to Detroit for reshipment to us through Chicago. We waited five days for what would have been an overnight shipment and spent considerable time and money in trying to determine just how it was finally shipped.

Sometimes a supplier doesn't use our suggested routing. Or his idea of 'best' way isn't the best. If our traffic department subsequently checks and finds another routing which is substantially less, we have no qualms about charging back the excess. After all, we are the custodians of our cash and on repeat shipments from the same vendor we are going to get the service we expect.

✓ **Choose carriers the same way you choose suppliers.** Trying to do the other fellow's job is costly. Because purchasing doesn't deal directly with carriers, we shouldn't loosely suggest any carrier to a supplier—nor is it wise to let the supplier choose the carrier. Traffic may have very good reasons for not wanting to deal with a certain carrier. Purchasing has dealt with vendors who weasel out of claims concerning faulty merchandise. After that we avoid them. In the daily rough and tumble of doing business, traffic develops definite opinions—about certain carriers.

Limited unloading facilities could be one reason why traffic should control the number of car-

Buyer's Transportation Chart

Transp. Media	Description	Application	Can Be		Cost Comparison	Remarks
			Traced	Expedited		
Carload and Truckload	Full rail car or trailer.	Where quantity is sufficient to warrant. (Differs with product)	Yes	Yes (in advance)	Cheapest Method	Total charges depend upon minimum weight required, routing used, and many other factors. <u>CONTACT TRAFFIC DEPARTMENT</u> for best method.
Truck	Motor Truck	For all shipments over 50 lbs. not requiring emergency Air Service.	Yes	Yes (in advance)	Most economical method of shipping over 50 lbs.	Recommend truck routings when single line service is available
Freight Forwarder	Truck pick-up for assembly into carloads, includes truck del'y. at destination.	For all shipments over 50 lbs. not requiring emergency Air Service. Forwarder usually on long haul.	Yes	Yes (in advance)	Most economical method of shipping over 50 lbs.	Superior to motor truck service in many specific cases. Should never be used on shipments over 10,000 lbs. without consulting Traffic Department.
Railway Express	Freight handled by Express Company on passenger trains. Includes pick-up and delivery.	To or from out-of-way points. Also between large cities when expedited service is required	Very Difficult	Difficult	Generally cheapest under 50 lbs.	Inferior to truck service in many cases. (CONTACT TRAFFIC DEPARTMENT)
Air Freight	No. 1 Regular passenger airlines which also handle air freight up to a limited size and weight.	Rush shipments over 20 lbs. Usually as fast as Air Express.	Yes	Yes (in advance)	2½ to 3 times more costly than truck or freight forwarder. Cheaper than Railway Express in many cases. (Check with Traffic Department)	In rare cases may be delayed to give priority to mail or Air Express.
	No. 2 Cargo air carriers handling freight only.	Rush shipments over 20 lbs. Usually as fast as Air Express.	Yes	Yes (in advance)	2½ to 3 times more costly than truck or freight forwarder. Cheaper than Railway Express in many cases. (Check with Traffic Department)	Good service between major cities; only one flight daily into Columbus.
Air Express	Complete pick-up and delivery service using all commercial airlines on shipments of limited size and weight.	Extreme emergency only! Of little value to and from points not on a scheduled airline.	Very Difficult	Difficult	3 to 4 times more costly than Air Freight generally.	We have no choice of airlines used or routings chosen by Express Company. Air Freight service is comparable in most cases. (CONTACT TRAFFIC DEPARTMENT)
Air Freight Forwarder	Brokerage service using all commercial airlines and surface transportation when necessary.	Extreme emergency only!	Yes	Yes (in advance)	Usually more costly than Air Express (except over 100 lbs.) <u>ALWAYS MORE COSTLY THAN AIR FREIGHT.</u>	Cost is prohibitive except in cases when a few hours transit time differential is vital. (CONTACT TRAFFIC DEPARTMENT)
Parcel Post	4th Class regular mail.	Up to 20 lbs. when transit time is not important. 40 lbs. up to 150 miles. Very small rush shipments!	No	No	Cheaper than Railway Express	Generally not advisable except on very small packages on which delivery is not urgent.
	4th class air mail		No	No	Approximate to Air Express up to 5 lbs.	Generally not advisable except on very small packages on which delivery is not urgent.

This routing guide is typical of the data a traffic department can furnish purchasing. It was prepared by the traffic group of North American Aviation, Columbus, O., and supplied to Purchasing Magazine by John H. Campbell, director of material.

riers. In our case—with apparently not too much foresight—we built a long driveway from one end of the plant to the other which carriers enter on one end and leave at the other with seldom an opportunity for by-passing the slow loading or unloading truck. Carriers are unhappy if we get too many in at the same time.

Our traffic department tries to have our purchase orders specify as few different carriers as is feasible to save carriers' loss of time due to waiting. We feel, too, that unless we cooperate with

traffic and give them every opportunity to minimize their loading and unloading dock problems, we are doing a general disservice to our company. Only traffic has the know-how to schedule into our plant and only through their analyses of our purchase orders can they control incoming carriers.

On volume shipments that are F.O.B. shipping point it is surprising how often the vendor will request a certain carrier and be quite insistent about it. We'll ask our traffic department for ap-

proval and more often than not we'll find out that the carrier the vendor wants is not the best one for us. I'm a firm believer in building up loyalties to suppliers. It pays dividends. I can understand our traffic department's desire to build up loyalty on the part of specific carriers. If traffic's choice of a carrier goes into the shipper's city, we understandably want him to bring in our purchase rather than use a carrier who is relatively unknown to us.

In buying carrier service, just as in buying materials, we expect

Destination of shipment is clearly marked. This prevents misdirecting, long delays.

Insistence on packing list accompanying each shipment saves time, eliminates confusion.

KEARNEY & TRECKER CORPORATION

SHIP THIS ORDER TO ADDRESS CHECKED

MAIN PLANT
6784 W. NATIONAL AVENUE
MILWAUKEE 14, WISCONSIN

SPECIAL MACHINERY DIVISION
550 SO. 108TH STREET
MILWAUKEE 14, WISCONSIN

AIR TRANSPORT DIVISION
4864 SOUTH HOWELL AVENUE
MILWAUKEE 7, WISCONSIN

PHONE: GREENFIELD 8-6300 TWE. 91-571

RESIDENTS AND BUILDERS OF PRECISION AND PRODUCTION MACHINES SINCE 1888

Purchase Order No.

MARK OUR PURCHASE ORDER NUMBER ON EACH PACKAGE AND INVOICE. BE SURE TO INCLUDE A PACKING LIST WITH EACH SHIPMENT.

MAIL INVOICE IN DUPLICATE

VOID

DIRECTOR OF PURCHASES

ALL INVOICES AND CORRESPONDENCE REGARDLESS OF SHIPPING INSTRUCTIONS ARE TO BE ADDRESSED TO:
6784 W. NATIONAL AVE. MILWAUKEE 14, WIS.

DATE OF ORDER

TERMS

QUANTITY

ITEM NO.

DESCRIPTION

DATE WANTED IN OUR PLANT

UNIT COST

Who pays the freight? Making it clear at the start heads off later disputes.

Importance of traffic in a purchase is shown in just four "Terms and Conditions."

TERMS & CONDITIONS

PLEASE SHIP FAR ENOUGH IN ADVANCE TO ASSURE OUR RECEIVING DELIVERY IN OUR PLANT ON THE DATE REQUESTED.

1. ACKNOWLEDGMENT OF THIS ORDER STATING DEFINITE DELIVERY DATE AND PRICES MUST BE MADE BY RETURN MAIL.

2. DO NOT INSURE PARCEL POST OR EXPRESS SHIPMENTS.

3. ALL SHIPMENTS ARE TO BE MADE F.O.B. DESTINATION AND SHIPPED CHEAPEST WAY UNLESS OTHERWISE INDICATED.

4. CARLOAD SHIPMENTS CONSIGNMENT TO MAIN PLANT MUST BE ROUTED FOR CUSTROP OR CARM DELIVERY. CARLOAD SHIPMENTS CONSIGNMENT TO SPECIAL MACHINERY DIVISION MUST BE ROUTED FOR CUSTROP DELIVERY ONLY. ROUTE NO RAIL SHIPMENTS TO AIR TRANSPORT DIVISION.

5. INVOICES SPECIFYING CASH DISCOUNT AND DATED FROM THE 1ST THROUGH THE 15TH WILL BE PAID ON THE 15TH OF THE SAME MONTH, AND THOSE DATED FROM THE 16TH THROUGH THE 31ST WILL BE PAID ON THE 15TH OF THE FOLLOWING MONTH.

(CONTINUED ON REVERSE SIDE)

THIS ACKNOWLEDGMENT FORM WILL FIT INTO WINDOW ENVELOPE. PLEASE DETACH AND RETURN IMMEDIATELY

TO
KEARNEY & TRECKER CORPORATION
6784 W. NATIONAL AVENUE
MILWAUKEE 14, WISCONSIN

F.O.B. _____ TERMS _____

PURCHASE ORDER No.

DATE K & T PART NO. VENDOR'S ORDER NUMBER

RECEIPT OF THIS ORDER IS HEREBY ACKNOWLEDGED.

WE WILL MAKE SHIPMENT ON _____ DEFINITE DATE

VENDOR'S NAME _____

SIGNATURE _____ TITLE _____

NOTE: AS SOON AS POSSIBLE OR IN A FEW DAYS IS NOT A SHIPPING DATE. PLEASE STATE POSITIVELY WHEN YOU EXPECT TO SHIP

Reduction of traffic costs begins with proper design of the purchase order. Note the significant traffic information that is clearly spelled out on this form.

Making suppliers follow instructions on shipping promises helps cut down expediting.

traffic to use the carrier who works for him, who is willing to go the extra mile in tracing or effecting rush delivery. A good vendor for purchasing is judged on quality, price and delivery. The same applies to carriers. Building up a corps of carriers that feel they are really a part of an organization assures special attention to emergency requests as

well as adequate service and attention to normal shipments.

✓ Ask traffic's help in tracing and expediting. Expediting and tracing shipments are usually done under stress or pressure because of urgency in one of our operating departments. Many of our suppliers are so organized that our order goes to one office

but shipment is made from another city or state. Buyers try to catch these variances through past experience and request from these vendors specific shipping point data. Tracing efforts are then minimized when urgency demands a follow-up and traffic doesn't start on what later develops into a blind alley.

(Please turn to page 206)

Rockwell Rips Into Freight Costs

Aware of the close relationship between purchasing and traffic, Rockwell Manufacturing Co. has worked out an effective program for cutting traffic costs.

KEEP YOUR EYE on one of the most important new industrial trends: closer cooperation between purchasing and traffic. It was only a few years ago that management began checking the books and discovered that its freight bill was its third largest expense. Only purchased materials and labor cost more.

Now the pressure is on for more efficient traffic management. This affects purchasing because of the close relationship between purchasing and traffic—witness the fact that in companies where there isn't a separate traffic department, it's usually the P.A. who does the freight buying.

One of the front-runners in combining efficient traffic handling with skilled purchasing is the Rockwell Manufacturing Company, Pittsburgh. The fact that C. Warner McVicar's official title is Director of Purchasing and Traffic indicates Rockwell's awareness of the important relationship between these functions.

Since Rockwell is a leader in promoting effective purchasing and traffic management, it's not surprising to find that the company recently scored what might be regarded as two "firsts": (1) it developed an outstanding traffic manual comparable to its fine purchasing manual (see *PURCHASING Magazine*, May 26, 1958, p. 51); (2) it recently began issuing a pithy traffic newsletter containing practical advice on how to reduce freight costs.

The traffic manual, compiled

by Rockwell Traffic Manager Tony Bruens, with the firm backing of purchasing head McVicar, is a model for companies with full scale traffic departments. It's also extremely helpful for companies in which the P.A. has complete responsibility for traffic.

Clearly the result of careful organization, the manual covers just about every conceivable traffic problem. Included are sections on: auditing freight bills, transportation taxes, demurrage, payment of freight bills, intra-company shipments, tracing and expediting freight claims. It also covers retention of records, weight agreements, parcel post shipments, railway express shipments, in addition to many other freight topics.

Helpfulness of the manual shows up clearly in these sample excerpts:

Compare Shipping Rates

• "You will find in many instances that truck rates are much higher than rail rates on shipments up to 2000 pounds in weight. It is very important that these shipments move by rail where we prepay or allow the freight. If a routing is specified by the customer, the difference in transportation costs (on prepaid shipments), if any, is to be shown on your shipping copy so the charge may be added to the invoice.

• In case of damage claims, the manual states: "The carrier should in all cases be called to

make an inspection. If the carrier waives inspection you should be notified accordingly in writing. If the merchandise is damaged beyond repair we should obtain disposition of the salvage from the carrier. On outbound prepaid shipments where the customer insists that we file a claim, the same information will necessarily have to be furnished by the customer. The following papers are required by the general traffic department in processing these claims:

- a. Copy of the carrier's inspection report
- b. Original bill of lading
- c. Original freight bill
- d. Certified copy of invoice covering repairs if made by vendor
- e. Letter of explanation and if repairs are handled by a Rockwell plant we must have cost of replacement parts, hours of labor and rate per hour."

Newest development in Rockwell's freight cost reduction program is its monthly newsletter. This is distributed to all plant managers, traffic representatives and purchasing agents.

Purpose of the newsletter is to keep both traffic and purchasing departments constantly on the qui vive to cut freight costs. For example, a recent newsletter points out that on freight forwarder shipments it is important to show on bills of lading the separate weights of skids, pallets and platforms. The reason: freight forwarders do not charge for skids or pallets but will charge for any

The carriers listed below have completely eliminated pier delivery charges at the therefore necessary an export shipper's clearing through New York and requiring use these carriers where possible:

Acme Fast Freight
Chicago Express
Conner-Berrett
Eastern Express
General Expressways

Helen Express
Inco State Truck Serv
Long Transportation
Spector Freight Syst
Wilson Freight Frac

We must have your fullest cooperation in expediting any freight bills on materials needed to support a transportation charge to the customer. Material and Value until these freight bills are received. Impress your carriers of this importance are forwarded promptly.

It is a definite must that the classifications used by our vendors on materials certain that the proper description is being used. If at any time there is proper description of raw materials, or any of our own products, let us

Our job in reducing transportation costs must take us into every aspect a point to work at saving, our transportation costs can be cut. Any will be appreciated.

W. F. Rockwell, Jr.
L. A. Dixon, Jr.
F. P. Maxwell
P. C. Krouth
C. K. Madison
C. W. McVicar
A. C. Dougherty
H. Gutsmund
B. Coon
L. H. Russell
H. W. Rowland
W. T. Goring
W. M. Coomer



ROCKWELL TRAFFIC News Letter

FROM GENERAL TRAFFIC DEPARTMENT

April, 1958

TO: General Manager and Traffic Representatives

Burlington
Bellefonte
Dulles
Edward
Guelph

Hopewell
Instrument
Kearney
L.F.M.
National

Oakland
Porterville
Regulator
Republic
Russellville

Southwest
Sulphur Springs
Tupelo
Uniontown

Carrier Rates Rise Again!

Still more effort is needed to keep our transportation costs down. Effective January 15 the rail carriers have increased all class rates 2%. The motor carriers have increased volume or truckload rates within the south and between the south and all territories, excepting the far west, 5%.

Percentage-wise these increases may not seem large but they mean additional thousands of dollars added to our transportation bill for just one year. And these increases have been steady - year after year. During the year 1957 we fully prepaid or allowed freight in the amount of \$2,384,459. This figure is broken down as follows: Petroleum and Industrial, \$14,027; Gas Products, \$279,799; Hardstream Valves, \$1,273,158; Dual Parking Motor, \$16,083; Water Motors \$129,467, and Power Tools \$556,774.

In adding the cost of our inter-plant shipments, shipments to warehouses and vendor shipments to the above figure our annual transportation bill will run over \$4,000,000. It is very simple to see that if all plants could reduce their transportation expense just two or three percent, a great deal of money would be saved.

This reduction can be made if all concerned take an active part and have the feeling that every reduction in transportation costs, no matter how small, is definitely important. Following are some of the ways costs can be cut:

Export shipments and shipments to municipalities are exempt from the transportation tax. It is regrettable to know that several divisions have been approving many freight bills which include these taxes. Section 10 of our Traffic Manual clearly indicates that these shipments are exempt from transportation tax, and if the carrier includes it with these charges, it is to be deleted. It is hoped that we will not be compelled to file any more overcharge claims of this nature.

On freight forwarder shipments to the west coast it is extremely important that we show on our bills of lading the separate weight of our skids, pallets or platforms. The freight forwarder will not assess transportation on the skids, pallets or platforms proper but will assess charges on any material not a part of the pallet, skid or platform used to protect the top of the material being shipped.

Rockwell's monthly traffic newsletter has proven to be a highly effective cost cutting tool.

Organization of the Rockwell traffic department shows clearly the company's awareness of the closeness of the traffic-purchasing relationship.

material not a part of the pallet, skid or platform used to protect the top of the material being shipped.

Another tip offered in the newsletter is the report that a number of carriers have eliminated pier delivery charges at the port of New York. The newsletter lists these companies and advises traffic personnel to use them for any export shipments clearing through New York.

The attention Rockwell is giving to reducing freight costs and its awareness of the close relationship between traffic and purchasing can have only one result: higher profits. END

STANDARD B & P "NOTE"

STANDARD B & P "NOTE"

ROCKWELL MANUFACTURING COMPANY TRAFFIC MANUAL

April, 1957
Section 4-Page 1

TRAFFIC PERSONNEL

Home Office

C. W. McVicar, Director of Purchasing and Traffic
A. J. Brown, General Traffic Manager
J. F. Shearer, Assistant General Traffic Manager

Plants

Rockwell Mfg. Co. of Canada, Ltd., Guelph, Ont., Canada ----- D. I. Black
Pittsburgh-Dubois Division, Dubois, Pennsylvania ----- Herb Smith
Edward Valve Division, East Chicago, Indiana ----- Mrs. Vera Jaeger
Edward Valve Division, Knox, Indiana ----- Mrs. Vera Jaeger
Hopewell Division, Hopewell, New Jersey ----- D. D. Crum
Instrument Division, Tulsa, Oklahoma ----- C. F. Norton
Hardstream Valve Division, Oakland, California ----- E. Dishman
Regulator Division, Hurwitt, Ohio ----- E. Landoll
Burlington Division, Burlington, Ohio ----- E. Lindeman
Rockwell Motors, Inc., Uniontown, Pennsylvania ----- Mel Gorton
Rockwell Register Corp., Bellefonte, Ohio ----- A. V. Haggerty
Rockwell Valve, Inc., Sulphur Springs, Texas ----- R. F. Montgomery
Russellville Division, Russellville, Kentucky ----- T. Foulkes
Tupelo Division, Tupelo, Mississippi ----- Dale Dole
LPM Mfg. Co., Subsidiary of Rockwell Mfg. Co.,
Atchison, Kansas ----- V. Lehman
St. Joseph, Missouri ----- W. Lehman
Kearney Division, Kearney, Nebraska -----
Porterville Division, Porterville, California ----- D. Henry



Traffic Tips For the Small-Company P.A.

If traffic is more or less of a sideline for you, there's little chance you'll ever become a transportation expert. But a knowledge of some basic facts will give you a good start toward keeping traffic costs down.

By Leonard Sloane, Associate Editor

THE P.A. who has to operate without a traffic department can't be expected to know all the ins and outs of this complex field. But there are certain basic facts he should be aware of if he is going to do an adequate job in his role as traffic manager.

The first question that's likely to bother the P.A. is which is the

better way to have goods shipped—by rail or by truck? (Air freight, of course, is another problem entirely. It's discussed in the article on page 80.) Naturally, there's no pat answer to the rail vs. truck problem. It all depends on the circumstances. But generally speaking rail deliveries provide these advantages:

(A) Rail shipments are faster for long distance deliveries of 500 miles or more—especially over rough or mountainous terrain. Rail freight from Boston to Los Angeles takes five days. Similar cross-country shipments by truck take six or seven days.

(B) Rail freight gives the buyer more time to unload freight. Most railroads allow freight cars to remain at a plant for 48 hours before charging demurrage. And even when demurrage has to be paid, it's not too expensive. Average charge is only about \$4-a-day per car for the first four days after the 48-hour grace period has elapsed.

Saves Time and Money

The more leisurely unloading made possible by rail freight eliminates the problem of lines of trucks being tied up around the plant waiting for dock space; it also reduces overtime payments for unloading operations.

Truck shipments have their own advantages, too:

(A) On short hauls, under 500 miles, truck delivery is usually faster. And if a supplier located within 100 miles delivers by truck, in-plant inventories can be kept to a minimum. Door-to-door shipments can be made in a matter of hours and P.A.'s can buy directly to production needs.

(B) There's more flexibility with truck shipments. Deliveries are made throughout the day—and even after hours if need be. But rail shipments are usually on a one-a-day basis. If a freight car is held up for 30 minutes at a marshalling yard it might mean that delivery wouldn't be made until the following day.

(C) There's less chance of freight damage with truck shipments. Trucks generally have better cushioning equipment and don't travel as fast as freight cars.

Aside from the truck-rail problem, the P.A. should also have a good grasp of the freight classification system. Uniform commodity classifications were adopted by the railroads many years ago and were later picked up by the trucking industry. Within each commodity class there is a system of rates for the various items that

Checklist for Lowering Traffic Costs

Here are some questions the conscientious buyer should keep in mind when considering traffic costs. They are reprinted, with permission, from the *Purchasing Handbook* (McGraw-Hill Book Co., New York).

(1) Does the weight shown on the bill of lading appear accurate, or should a scale ticket be requested to support the figure?

(2) Are railroad demurrage and truck detention charges excessive, and if so, what steps are necessary to control this expenditure?

(3) Depending on comparative rates, can rail shipments move more economically via truck, or vice versa?

(4) Is there excessive transportation cost as a result of unwarranted use of premium transportation; namely, air freight, air or rail express?

(5) Is it possible to incorporate into the routing program the lower rated services of

freight forwarders or water carriers?

(6) Are mixed carload or truckload shipments forwarded in such a manner as to protect the lowest total freight charge?

(7) Is it possible to consolidate numerous small-lot shipments into fewer larger carload or truckload shipments with resulting freight savings?

(8) Is trucking expense being squandered on unnecessary pickup or deliveries of freight at carrier's platform when such pickup or delivery service by the carrier is included in the tariff rate?

(9) Is the freight classification of the commodity shipped specific or is an improper description being utilized which results in the assessment of higher freight charges?

(10) Is it possible to order or ship materials in greater weight quantities in order to take advantage of the lower rates afforded in the higher weight brackets? Many less truckload and less carload rates decrease in direct proportion to the amount of weight offered for transportation.

determines the freight charges on a city-to-city basis.

The rates charged for the various commodities are determined by basic transportation characteristics such as density, weight, value, and how fragile the item is. Rates are established by the carriers but must be approved by the Interstate Commerce Commission.

In certain instances, freight rates have been established on the basis of what the traffic will bear. When one form of transportation has a natural advantage over another in shipping a particular commodity (captive freight), its rates are often higher than for another commodity which can be shipped two or three ways.

Paying Too Much?

P.A.'s have many opportunities to save by knowing the various freight classifications. Frequently freight is incorrectly described on routing slips and placed in the wrong classification. This often means higher freight charges.

An example of how purchasing can save by knowing freight classifications is the case of a P.A.

for a large manufacturing company who was able to have the classification changed on a purchased item by suggesting a design change to a supplier. He had been buying cable reels 10½" in diameter. When the vendor changed the diameter size to 10" at the suggestion of the P.A., the classification was changed from a "reel" to a "spool." Result: a lower freight rate.

The opportunities for saving money in transportation are limitless. One of the easiest ways is through consolidation of shipments.

Carload and truckload rates are considerably lower than LCL or LTL rates. This is a field that deserves more careful study than ever because of freight rate increases. Quantity pricing in transportation is just as important as in purchasing commodities.

There is also a considerable difference between the rate for a carload and a truckload. By consolidating deliveries into one 40,000-pound carload a month instead of two 20,000-pound truckloads every two weeks, the advantages might easily outweigh the additional inventory costs.

Even a 30,000-pound rail shipment at the LCL rate might be cheaper than two 15,000-pound truckloads.

Minimum shipments charges should also be considered when placing an order. If the minimum charge for moving a certain material between two cities is \$3.50 and the shipping rate is \$1.00 per 100 pounds, frequent deliveries of 100 pounds are wasteful.

Study Weight Rates

Take the lead of a professional—Douglas Dawson, general traffic manager for the Norton Company in Worcester, Mass. Whenever possible he tries to make use of the 28,000-pound truckload rate between New York and Boston. "This gives us a 68% saving compared to a 500-pound shipment," he says, "as well as substantial savings over 12,000 and even 20,000-pound shipments."

Use of shippers associations can also result in large savings—especially for small company P.A.'s.

These associations are voluntary cooperative organizations, owned and operated by member companies, usually under the guidance of a professional manager.

(Please turn to page 196)



Cut Costs With Air Freight

The speed of air cargo often more than compensates for its higher initial cost. As a result, air freight is no longer just an emergency service. Industry looks to jets as a source of new growth, expanding service, and lower rates.

By John Van de Water, Technical Editor

AIR FREIGHT is on the move. Today more than ever, the purchasing agent must be alert to developments in this field. Volume, which has increased six-fold since 1947, now stands on the threshold of another jump. Jets hold the key. Domestic ton-miles reached the 600 million mark in 1959. Experts say this figure will double by 1963, and double again by 1967.

For the user this will mean two things: better service and lower rates.

But the purchasing agent doesn't have to sit back and wait for a change. He can benefit by using air freight right now. That he is already alive to its value is shown by a survey recently conducted by **PURCHASING Magazine**.

Of the respondents to this survey, 93% replied "Yes" when asked whether they ever directed that incoming shipments be sent by air freight. Of these, 48% stated that their use of air freight is increasing. In addition, 66% indicated that they were sometimes in a position to specify air freight on outgoing shipments!

The P.A. Decides

These figures don't just reflect the rapid expansion in the use of air cargo. They point especially to the growing influence of the purchasing agent on the choice of transportation. The P.A. is, in fact, in the best position in his company to determine the overall value of air shipments in managing materials. When it comes to

paying premium freight charges for incoming goods, he is usually the one who decides.

The purchasing agent can see beyond the high immediate cost of shipping by air. He realizes that its unusual speed can shorten lead times, reduce the volume of goods in transit, and cut his inventory. The resulting lower storage, interest, obsolescence, tax and insurance costs mean lower material costs.

To evaluate these advantages the knowing P.A. compares ultimate total costs, not just cost per pound or per ton-mile of truck vs. air transportation. He doesn't even look at rail costs. Why?

Because the same products are not involved. Rail transportation is excellent for bulk materials,

heavy equipment, and large machinery. High "value-density" products are eligible to go by air. And these are the items that cost money to keep in inventory.

According to a large air freight forwarder, the average air shipment weighs 85 pounds and costs \$25 to ship. Most common items are machine parts, automotive and aircraft parts, electronic components, tools, and perishables (drugs, chemicals, flowers, film, etc.).

Cut Inventories

Undoubtedly air transportation is costly compared to other means. But the phenomenal growth of air cargo in the last decade and this in the face of tariffs two and three times those of the nearest competitor, show that the method has value well beyond that of purely an emergency service. Many users of air freight take the "planned emergency" approach. They balance the risk of high transportation costs against the risk of high inventory. They

have found that when the value of a commodity exceeds two dollars per pound it is often advantageous to cut inventory drastically and get more frequent shipments by air.

An appliance manufacturer whose products are always close to obsolescence has practically no stock of key components. Instead, he receives from 20 to 30 air deliveries a day. A manufacturer of electrical equipment uses air freight in one out of three or four shipments of high value items. In this way he reduces inventory without substantially increasing freight charges.

A heavy equipment manufacturer no longer stocks replacement parts for his machine tools. He makes an exception only for those parts whose failure would cause severe breakdowns—then stocks only one of a kind. All parts are brought in by air when needed. The few in stock are replaced by air as soon as one is used. In this way the company has cut its machine tool parts

inventory by 90%.

Air freight effectively eliminates distance from the procurement picture. All places are near; the need to buy from local sources disappears. One buyer decided to buy a machine from an overseas manufacturer—at a lower cost than the U.S. equivalent, when he learned that replacement parts would be shipped by air on a routine basis.

In addition passenger jets will add flexibility to cargo service. They can take four or five tons of cargo. With limited jet service today heavy passenger loads prevent freight from being carried on many flights but freight capacity will go up as soon as increased jet service brings passenger loads down.

Foresees Rate Cut

What will extra capacity mean to freight rates? One air cargo official has this to say: "An airlift capable of moving freight in quantity will be provided by new jet and turbo-prop aircraft now coming into service or on order. Reduced rates will be permitted by the greater efficiency of these aircraft, and required by the necessity of filling them."

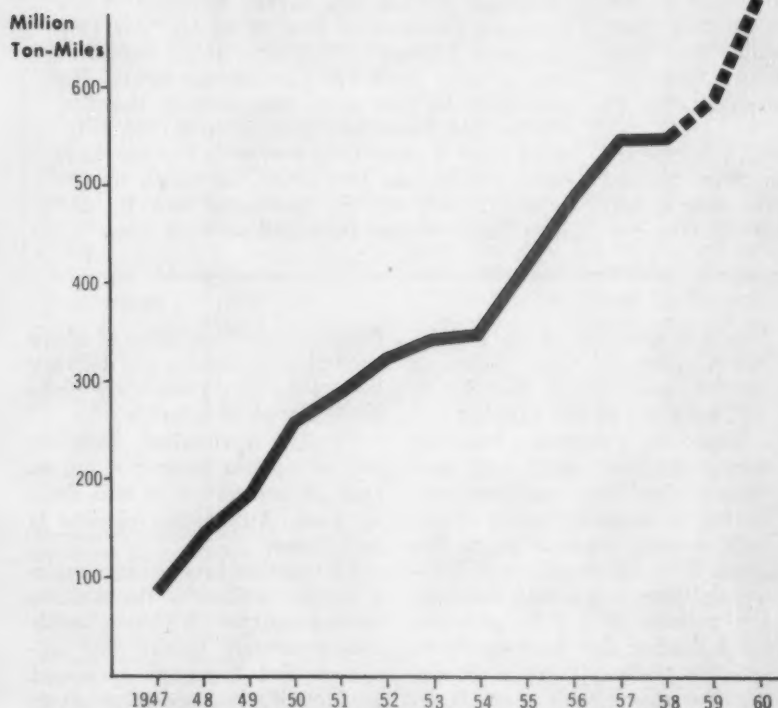
Besides considering a cut in freight charges the carriers are beginning to study unprofitable rate patterns. Both rail and truck lines are burdened with complex commodity rates. Some airline officials wonder, when bulk and weight are of prime importance, whether there is any sense in basing rates on what is inside the package.

Spectacular rate cuts this year should not be looked for. But a 50% reduction in five years has been mentioned by people who ought to know. Yet air freight costs don't have to equal or be less than truck rates. Speed will always have premium value and, as has been pointed out, even at today's rates air transportation can help cut the material dollar.

Better Ground Service

Aside from the cost factor, the airlines are aware that they have to offer greatly improved ground service before the true value of the speed of air transportation is

Trend in Air Cargo Traffic



Volume of air cargo rises steadily, is expected to double by 1963. Trend to larger shipments is shown by fact that in 1947 air express accounted for 61% of total; today it is less than 10%.

Guides on Using Air Freight

The purchasing agent can ship by air in a number of ways: air parcel post, air express, and air freight. Freight can be handled directly by the carrier or routed through a forwarder who can offer some additional services. Selection depends on the lowest cost relative to the service desired.

The chart shows the best method to use for given weights and distances, provided cost is the primary concern. Other features, however, must be kept in mind.

Because of weight limitations air parcel post and air express are best for emergency use. Parcel post cannot be expedited or traced; express only with difficulty. However, they both have priority over air freight. Also the mechanics of shipping are simple; documentation is insignificant.

For major shipments, anything over 20 pounds in fact, the main question is whether to ship via the carriers directly or through freight forwarders. The carrier can offer good service to any city on its regular route at a cost often below that charged by the forwarder. He can give expediting service—advising the shipper on which plane his freight is loaded and expected arrival time.

Most shippers deal with carriers, but there is a strong tendency to use the air freight forwarder more frequently. As in rail freight, the forwarder consolidates small shipments on one bill of lading and gets the volume rate from the carrier. He charges the shipper less than the carrier would. The forwarder, however, can save the shipper money only when weights are below the minimum.

The major advantages of using a forwarder lie in the extra services he can offer. Instead of making pick-ups and deliveries once a day, he provides around-the-clock service. He con-

	0 TO 300 MILES	300 TO 400 MILES	400 TO 1000 MILES	1000 TO 1400 MILES	1400 TO 1800 MILES	1800 TO 2400 MILES
1 Pound						
2 Pounds						
3 Pounds						
4 Pounds						
5 Pounds						
6 Pounds						
7 Pounds						
8 Pounds						
9 Pounds						
10 Pounds						
15 Pounds						
20 Pounds						
25 Pounds						
30 Pounds						
35 Pounds						
40 Pounds						
45 Pounds						
50 Pounds						
55 Pounds						
60 Pounds						
70 Pounds						

trols the shipment to its destination and will provide constant follow-up information if desired. He can select any airline and will transfer shipments to speed delivery rather than wait for a later direct plane. The forwarder has reserved space with the carrier and therefore always knows his capacity for each destination. The airlines will reserve space only if it is used on a regular schedule.

Special services are offered by some of the large air forwarders. One offers an "Air Procurement Service" which acts as an expeditor and shipper both. A purchasing agent, the consignee in this case, can contact the forwarder and direct him to pick up a rush shipment from a vendor. Armed with the purchase order number the forwarder will follow up the supplier, pick up the package, ship it, and keep the consignee informed on each step.

realized. Air cargo gets caught in the same delays as the passenger who has to wait a half-an-hour for his baggage and is faced with the problem of covering those last miles to his destination by car, bus, or train.

Has Great Potential

Until cargo made much of a dent on total airline revenue, there was little incentive to improve ground facilities. Even today cargo represents less than 6% of the airline's income (passenger service accounts for almost 82%). But the industry now recognizes the potential. It real-

izes that one day cargo will be more important than passenger service, even though that day is still very far in the future.

Improved ground handling means splitting cargo and passenger facilities; perhaps the answer is separate cargo terminals or even separate cargo airports. It means mechanized loading equipment. It means breaking the pattern of 4 P.M. pick-ups for following day delivery. With jets the traffic picture is changing. For many hauls there is no reason why 10 A.M. pick-up and 4 P.M. same day delivery shouldn't be feasible. The air

freight forwarders, many of whom offer 24-hour pick-up and delivery service six days a week, are pushing this type of schedule.

Finally, mechanized handling and jet speeds mean nothing as long as paperwork is still done by hand. Automation of data is the answer.

All together these factors mean a terrific outlay by the airlines for new equipment: planes, terminals, conveyors, trucks, data machines. But it means increased productivity for industry. Even the purchasing agent who uses the airlift today is only scratching the surface. ► END

When You Need More Help on Traffic

ALMOST ANY purchasing department would like to work with the ideal traffic organization—one staffed with experienced specialists and an army of clerks. But this type of traffic section is rare, and almost non-existent in smaller companies. Management just can't afford the extra overhead.

But how can industry get the specialized traffic help it needs to keep costs down? The answer for an increasing number of firms is found in the services offered by professional, profit-making traffic bureaus. These companies, usually located in the larger cities, provide specialized assistance on traffic problems. They will audit bills, make claims, and even take over the entire traffic operation of a company.

Guaranteed Recovery

Transportation Engineers, Inc., of Chicago, for example offers help on re-classifications, adjustment of claims, and will check such irregularities as erroneous billing by carriers, shippers' errors, etc. The company has been known to guarantee that it can recover a minimum of \$500 in excessive transportation charges in one year for any industrial firm.

A number of traffic consulting organizations will split fifty-fifty with their customers on any successful overcharge or damage claims that result from their audits.

Issuance of up-to-date rate information to clients is one of the many services offered by Climax Traffic Corporation of Chicago. Climax maintains rate cards for each product a client ships to or

Almost every company can use more assistance and advice on traffic problems. Outside consulting organizations will provide you with rate information, file claims, and audit your freight bills. Whether or not you have an organized traffic department, it will pay you to look into their services.

receives from a specific point. Rail, truck, and air rates are kept on separate cards. Other information on the card includes the legal tariff authority that applies, suggested route, and minimum weights.

As this data changes, Climax sends the customer a new card, and retains a copy in its master file. The revised card shows when the new rates become effective.

If the customer wants immediate freight information on new product not previously researched, Climax attempts to supply it immediately. Later it sends a confirming rate card and complete details as to how the rates were developed.

Rate cards enable purchasing departments with limited traffic knowledge or experience to: (1) determine the cost of incoming materials, and (2) compare actual rates with the carrier's charges.

Climax, like most traffic consultants, will have its representatives make personal appearances before rate regulating bodies in support of arguments for lower

rates. They also meet with railroad and motor carrier representatives in efforts to obtain classification changes.

Information on traffic problems is also available from a number of non-profit cooperative groups. Among these are:

—Shippers advisory boards (there are 13 regional groups throughout the country.) Through committees they offer information on such subjects as losses and damage prevention, tariff simplification, handling and moving LCL shipments, etc.

—The National Industrial Traffic League, which is nationwide in scope, has special committees on bills of lading, classification, car demurrage and storage, legislation, freight claims and claim prevention.

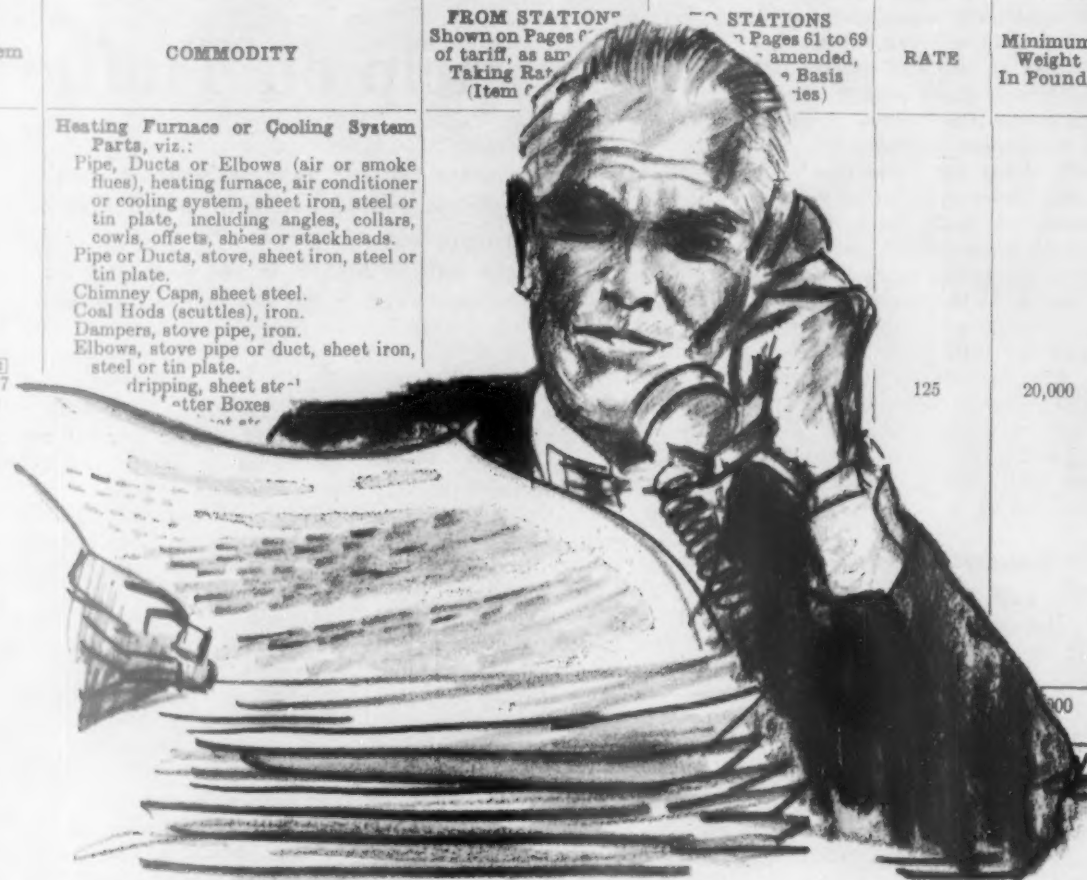
—Traffic clubs, made up of traffic and transportation personnel, exist in almost every large industrial city. They offer anyone interested in traffic an opportunity to make professional contacts and attend lectures and seminars on traffic. ► ENR

These are typical rate cards on commodities shipped between specific points. The traffic service company that develops them issues revised cards immediately as data are changed. This service saves traffic and purchasing departments a great deal of time and clerical effort.

ORIGIN	St Joseph, Mich.	RAIL RATES	To Akron, Ohio
COMMODITY	CANNED FRUITS	MINIMUM A	36000
C.L.	A41	L.C.L.	1-123
	834		5000 - 113
ROUTE	C&O-B&Q		
TARIFF REFERENCE	TL TRF 164 & 178		
CTR	1009		
REMARKS			
DATE	1-3-57	REVISED	"CLIMAX" SYSTEM

GENERAL COMMODITY RATES—In Cents Per 100 Pounds

Item	COMMODITY	FROM STATIONS Shown on Pages 61 to 69 of tariff, as amended, Taking Rate (Item 61)	TO STATIONS Shown on Pages 61 to 69 of tariff, as amended, on Basis (Item 61)	RATE	Minimum Weight In Pounds
1277	Heating Furnace or Cooling System Parts, viz.: Pipe, Ducts or Elbows (air or smoke flues), heating furnace, air conditioner or cooling system, sheet iron, steel or tin plate, including angles, collars, cowls, offsets, shoes or stackheads. Pipe or Ducts, stove, sheet iron, steel or tin plate. Chimney Caps, sheet steel. Coal Hods (scuttles), iron. Dampers, stove pipe, iron. Elbows, stove pipe or duct, sheet iron, steel or tin plate. Dripping, sheet steel Letter Boxes			125	20,000



How to Figure Your Freight Charges

*A few simple charts will enable the buyer
to compare freight costs at a glance.
Major savings can result.*

By James Stancill, Jr.

EXCESSIVE SHIPPING costs are one of the most common forms of waste and inefficiency in purchasing. For every purchase made there is a shipment, yet the importance is placed on "purchase" and very little is ever said of the "shipment".

A "Buyer's Guide to Freight Charges", properly prepared, is a simple tool that may make a big difference in the freight bill. It is constructed in the form of a matrix, with a series of weights across the top and the various methods of shipment listed in the left hand column (see cut). Since the majority of purchases are made from a relatively few cities, there is a page for each city. The

Mr. Stancill is a former purchasing man who is currently furthering his education by working on a Ph.D. degree at the University of Pennsylvania. He developed the guide to freight charges described in this article while employed by Melpar, Inc.

rates that are shown in the matrix will designate the charges from that city to your plant.

Methods of Shipment. Listed separately are eleven different methods. Experience shows these are the methods used principally by our company. Your company may use more, or less. Listing fewer methods, however, may give the chart too limited an application. True, a buyer of metal raw stock may seldom use air parcel post special delivery, but he will probably use it sometime. By the same token, an electronic components buyer may seldom ship via motor freight, as the dollar value—weight ratio is usually high. But the methods of shipment are selected prudently, with consideration given to all buyers, the guide will have more widespread use for the same cost of preparation. Also, if the methods of shipment are restricted, a pattern will be less discernible. For a given city, for instance, a method may fall in a different rank with respect to some criterion; such as cost or speed.

Weights Selected. The fifteen different weights listed are applicable to our field, electronics research and development. Other companies may find that these weights are not representative of the type of shipment they receive. If in doubt don't guess when selecting weights. Instead ask the receiving department to weigh incoming packages for a representative period.

Don't be niggardly when selecting weights, for again, an incomplete listing may hide the pattern. Be sure the 20, 40, and 70 pound parcel post limits are included. We show one hundred pounds as the top weights. This was done for two reasons: (1) the largest majority of items received were less than one hundred pounds, and (2) shipments over a hundred pounds usually are made at the hundred pound base rate. Again, don't make assumptions. If representative weights over one hundred pounds are needed, include them.

Freight Charges. At first, it may appear that the accumulation of the freight charges may require an inordinate amount of work.

Handy Table Shows Comparative Freight Charges

WEIGHT IN POUNDS	1	5	10	15	20	30	40	50	60	70	85	100
PP	24	36	52	66	87	100	121	156				
PFSH	49	73	87	101	137	150	171	206				
PPSD	69	93	107	121	142	170	191	226				
APP	66	166	266	366	516	616	766	1016	1516	2016	2516	3016
APPSD	110	220	320	420	570	685	835	1085	1585	2085	2585	3085
APPSH	90	200	300	400	565	665	815	1065	1565	2065	2565	3065
Air Ex	350	350	350	350	378	414	467	556	734	912	1090	1268
Airline Air Fght	725	725	725	725	725	725	725	725	725	725	825	825
Comm. Air Fght	1126	1126	1127	1144	1172	1190	1218	1264	1356	1448	1540	1632
Rail Ex	222	236	256	276	305	324	352	399	493	589	684	779
Motor Fght	412	412	412	412	412	412	412	412	412	412	412	412

CHICAGO

Explanation of abbreviations: PP - Parcel Post, PFSH - Parcel Post Special Handling, PPSD - Parcel Post Special Delivery, APP - Air Parcel Post, APPSD - Air Parcel Post Special Delivery, APPSH - Air Parcel Post Special Handling, Air Ex - Air Express, Airline Air Fght - Airline (Specify) Air Freight, Comm Air Fght - Commercial (Specify) Air Freight, Rail Ex - Rail Express, Motor Fght - Motor Freight.

Note: Rates shown in cents.

A buyer can use a chart like this to compare the cost of different shipping methods from a given city (in this case Chicago) to his plant simply by reading down any weight column. For instance, it costs \$3.78 to ship 10 lbs. by air express, \$4.12 by motor freight. Rates are those for a commonly used commodity.

This really isn't so. Much help will be received for the asking from the various freight agencies. This will overcome any difficulty in deciphering rate manuals.

With respect to gathering the data, this suggestion may be helpful. Make a matrix for each different method of shipment. Across the horizontal column fill in the representative weights decided on, and in the vertical column fill in the cities selected. If your company has a mailroom, give the sheets applicable to the Post Office to your mail clerk and have him fill them in. Send the other sheets to the agency concerned: the nearest Railway Express and Air Express office, the freight office of a representative airline, etc. When the data is complete it may be transcribed to the guide.

The freight agencies may wish to know the class of material in-

volved. For a general guide the class of rate should reflect a representative type of material received. In your letter to the common carrier, let him know what general business you are in and solicit his advice as to the "class of merchandise" on which to base the rate. This point is particularly pertinent for motor freight rates.

While compiling our chart, a rather salient fact was uncovered. Our main plant was located outside the air express free delivery zone. Anything that was shipped to us had a railway express charge added to the bill. In many cases, this resulted in an increase of 50 to 80% of the air express charge. This opened the door to a complete investigation and it was found that air freight carriers also made a charge for delivery be-

(Please turn to page 200)

Study by Commerce Department indicates that transportation industry is over-regulated. It should be made more competitive and more responsive to market place economics. No action is expected in this session of Congress, but the report is regarded as an important trend indicator of future government action.

TRANSPORTATION in this country is over-regulated. As a result, users of transportation are denied economic choice—which means the buyer is forced to pay more for the service than he wants to or should.

This is the basic premise of the Administration's approach to the transportation industry. It represents the central theme of an exhaustive transportation study prepared by the Department of Commerce.

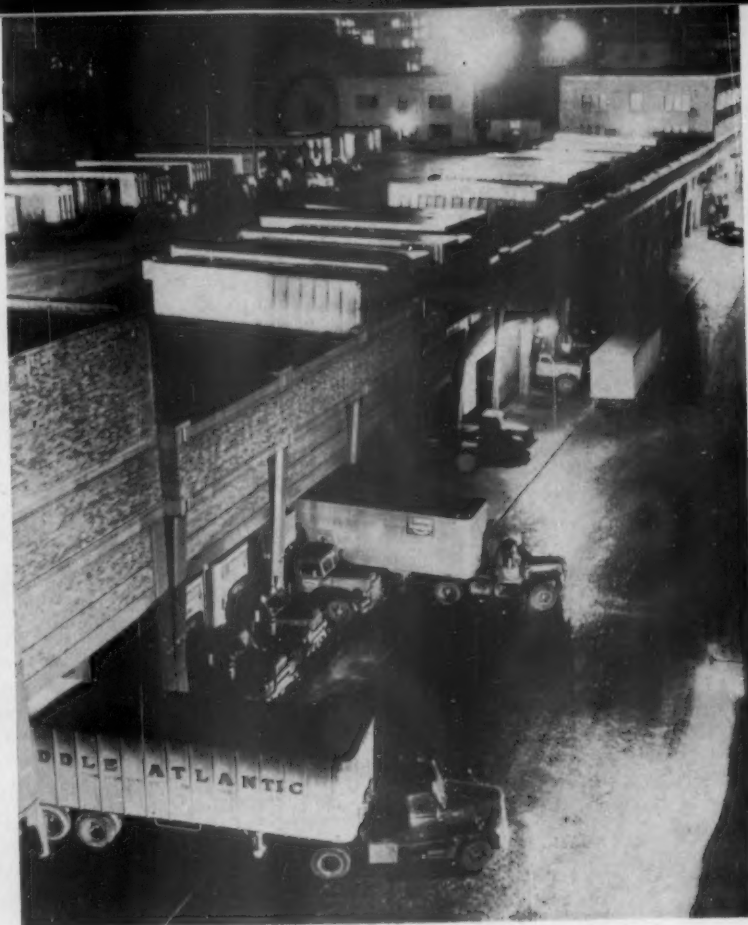
As a cure, the Commerce Department study points to reducing regulation, making transportation more responsive to the economic play of the market place.

This presumably would inject more competition among the competing forms of public transportation. However, Commerce officials claim that in an expanding economy, the various forms of transportation should not attempt to draw themselves into entrenched positions, but rather compete in an era of major growth.

If these warnings are not heeded, say the Commerce spokesmen, then the common carriers—and all forms of public transportation would be the losers.

The problems in transportation stem from the early days of our industrial development. Transportation began as a highly sheltered industry. Many economic inducements and special protection were given to the early rail systems.

One of the most potent of these inducements was a monopoly position, and this monopoly posi-



Transportation: Government Urges More Competition

By A. N. Wecksler, Washington Editor

tion later led to the need for regulation of rates.

Railroad transportation is no longer even remotely in a monopoly position—in fact, it is in vigorous competition with itself and even more so with air, waterborne and truck carriers.

Much of the government's regulatory policy has come to us from a past era when economic choice was not technically pos-

sible on the same scale as today. The basis of our present-day transport regulation was established in the Transportation Act of 1920, before we had a modern highway system, before waterways were built to today's standards, before the airplane had become a practical commercial carrier.

Most of the laws which set up the regulations governing trans-

portation today were premised on the Transportation Act of 1940, when much of the thinking was tintured by the depression of the 1930's and hardly in tune with the opportunities and problems of fast economic growth.

As a direct outgrowth of this history, government is heavily involved in regulating the policies as well as the day-to-day operations of the transportation system.

The regulations cover a broad spectrum including rates, route structure and such economic issues as what facilities must be operated and which can be abandoned—also, how much equipment must be kept in operation, and the variety of services which transportation agencies must supply.

Minimize Regulations

The study recently completed by the Commerce Department suggests that in practically every facet of government control, regulation can be reduced.

There is no suggestion that all regulation can be scrapped, nor is there any recommendation that changes in national transportation policy should be put into effect all at once. But the central theme of the new thinking is that there must be less regulation and more competition.

There is the suggestion that public carriers have been opposed to more liberal regulations on the premise that the freight traffic of the country is fairly fixed, and that a gain in traffic of one segment of transportation would be at the expense of another.

In contrast, the Department of Commerce projects a dramatically different picture. It points out that the nation's economy is in a period of unparalleled growth—that the total volume of intercity traffic is increasing in exact proportion to the growth of the national economy.

Commerce forecasts that in the next decade, the volume of intercity traffic will be so great as to require not only the plant and equipment of all present carriers but will also force substantial new investment.

Under Secretary of Commerce

for Transportation John J. Allen, Jr., under whose administration the Commerce transportation study was made, says that the transportation industry should forget intercarrier strife and work toward filling the expanding need for transportation services.

Under Secretary Allen puts it this way:

"It is up to the common carrier industry to see to it that a good share of this great future volume utilizes its plant and equipment. Rate and service policies should be aimed at this opportunity rather than to further the intercarrier jealousies which now enliven discussion of public transportation issues.

"We have seen the motor carrier industry express the fear that cost-justified reductions in rail rates will deprive motor carriers of opportunity for growth. Some actually see in such a policy a threat to the survival of this important carrier group. This position overlooks the great service advantage of the motor carriers, the great areas which now are not served by railroads, and above all, it fails to find opportunity in the further growth of our national economy.

"On the railroad side we see an industry worried about the great gains of its competitors. To some extent the rate and service policies of this industry are geared toward gaining back a major

share of the business that was lost, and otherwise cutting the new competitors down to size. This is a vain policy, because, again on account of the potential growth of traffic in a growing economy, the opportunity lies in the future rather than in reflecting on the wounds of the past.

"If economic growth in the coming decade will bring forth massive volumes of freight, the mass transportation capacity of the railroad industry will be indispensable. Rate and service policies must be shaped to allow this mass of traffic to move at substantial savings, to cut down on the future transportation burden facing our society. This is the dynamic, forward looking goal of railroad policy.

Preparing for the Future

"Public policy in transportation has as its legitimate goal the encouragement of better economic conditions in transportation. Transportation must serve the future by achieving greater economies in the physical distribution of goods. Where a speedier, more convenient service will conserve the resources available to industry, transportation must be allowed to provide that service at rates that are remunerative. Where a massive volume of goods must move to the great national markets, transportation must be

(Please turn to page 194)



"Okay, but don't wait for the cheaper German import, their ship hit an iceberg..."

What You Should Know About: The Legal Aspects of Transportation

Traffic law is a vast and complex field. The purchasing agent should know, however, what services the carrier is legally responsible for and his rights in cases of loss or damage claims.

By Lyle E. Treadway

WITH THE EXCEPTION of items delivered locally, buyers depend largely on common and contract carriers to deliver the multitude of materials and equipment required in their business.

It is not necessary for the professional buyer to have a detailed knowledge of transportation or traffic law. This is fortunate because the field is vast and complicated. It is more important that the purchasing agent have a basic knowledge of the practical aspects of traffic management—the kind of know-how that will enable him to save transportation dollars for his company and to set faster delivery with fewer damage claims. But along with this practical grasp of traffic problems, the buyer should have an understanding of certain fundamental legal rules applicable to transportation.

The Background on Traffic Law

It is difficult today to imagine a condition in transportation in which common carriers might arbitrarily choose their customers and vary rates and charges among shippers. Yet such was largely the condition which led to the enactment of the first regulatory legislation in 1887. There was much complaint on the part of farm groups concerning

exorbitant rates charged by railroads serving certain areas without competition and, in particular, there was general outcry against the practice of rebating part of the freight charges to certain favored shippers.

It was logical, therefore, that the first statute, known as the Act to Regulate Commerce, should establish the basic rule that rates, charges and practices affecting the movement of interstate traffic should be just and reasonable and free from discrimination. This principle remains, of course, as one of the cornerstones of federal transportation law.

This first act of Congress in this field also created the Interstate Commerce Commission which continues today as one of the most important and powerful administrative agencies.

The authority of Congress to enact legislation governing transportation was soon challenged on constitutional grounds. But the authority was upheld by the U. S. Supreme Court in the case of *Brown v. Walker*, 1896, as falling within the familiar "commerce clause" (Article I, Section 8, Paragraph 3 of the Constitution) which grants the power to Congress "to regulate commerce with foreign nations and among the several states and with the Indian tribes." On this "commerce clause" is now built a large part of the vast edifice of Federal regulation, in transportation and many other phases of the national economy.

In the years following 1887, and generally until 1920 when the present Interstate Commerce Act was adopted, Congress passed a series of acts intended to broaden the regulation of transportation and eliminate certain abuses. For a time it seemed to be a question of whether the ingenuity of carriers and shippers in circumventing the purposes of regulation would outstrip the work of Congress

Besides being a graduate lawyer, Mr. Treadway is purchasing agent for the Federal Glass Company and is a former vice president of the National Association of Purchasing Agents.

in enacting ever broadening legislation.

The original act lacked practically all criminal provisions and this was soon remedied to make an offense of willfully giving or inducing a discrimination in freight charges.

The Elkins Act of 1903 was the outgrowth of abuses in setting up certain special classifications which would apply only to specific favored shippers. This Act made the published tariff rates the standard of lawfulness and declared any departure therefrom a misdemeanor. This rule is still the law of the land.

One of the more important acts of Congress in the field of transportation was the Hepburn Amendment of 1906. Prior to this statute, regulation applied only to railroads, but the Hepburn Amendment extended coverage to express companies, forwarders and terminals. However, the most important feature was to give the Interstate Commerce Commission the express authority to prescribe a fair and reasonable rate for the future. The carriers, at this time, still retained the right to make rates, but if, after a hearing, they were shown to be unreasonable, the Commission could set them aside and compel the substitution of a proper charge.

Another familiar feature of present carrier regulation came into existence in the Carmack Act adopted in 1906. This required that carriers should issue a receipt in the form of a bill of lading for any and all traffic. It remained for the Bills of Lading Act of 1916 to control and stipulate by law the contract to be executed between the common carrier and the shipper while goods are in the possession of the carrier. As an outgrowth of this legislation the familiar Uniform Bill of Lading was created.

In the Mann-Elkins Act of 1910 still other well-known principles of traffic law emerged. Among these was the rule that through rates should not exceed the sum of local rates. Conversely, a greater charge for a shorter than a longer haul is prohibited except by authority of the Commission if found necessary to meet competitive conditions.

This Act also extended authority to the Commission to suspend rates proposed by carriers for a period not exceeding six months, pending investigation. This provision gave rise to the well-known Investigation and Suspension Docket of I.C.C. and is the procedural tool by which many rates are investigated and determined.

How Traffic Laws Stand Today

The significant features of these laws were incorporated and recodified in the comprehensive Interstate Commerce Act approved in 1920. This statute, with its subsequent amendments consti-

tute the principal basis of present Federal regulation over transportation matters.

The tremendous growth of motor truck freight made it necessary to enact certain special regulations for this classification of traffic. Accordingly, Congress adopted in 1935 the Motor Carrier Act which is known as Part II of the Interstate Commerce Act. It parallels very closely the provisions governing rail transportation with respect to establishment of rates, prohibition of preferences or discrimination, issuance of tariffs and adherence thereto, bill of lading, etc. Part III of the Act, adopted in 1940, governs transportation by common and contract water carriers.

Each of the states have adopted statutes and regulations governing transportation in "intrastate commerce." These are usually administered by a public utilities commission or similar body. As a practical matter, the state laws and court decisions are substantially the same as those relating to interstate shipments.

Basic Guides on Traffic Law

In the Transportation Act of 1940 Congress adopted a formal statement of "National Transportation Policy" which should guide the Interstate Commerce Commission and the courts. This now forms a preamble to the Interstate Commerce Act. It reads, in part, as follows:

"It is hereby declared to be the national transportation policy of the Congress to provide for fair and impartial regulation of all modes of transportation subject to the provisions of this Act, so administered as to recognize and preserve the inherent advantages of each; to promote safe, adequate, economical, and efficient service and foster sound economic conditions in transportation and among the several carriers; to encourage the establishment and maintenance of reasonable charges for transportation services, without unjust discriminations, undue preference or advantages, or unfair or destructive competitive practices. . ."

In considering the purchaser's rights with respect to goods lost or damaged in transit it should be borne in mind that any freight claim should be filed by the party holding title or ownership of the goods while in transit. Ownership, and, therefore, the obligation to file the freight claim, will usually vest in the buyer during freight movement if shipment is made f.o.b. seller's plant or warehouse.

Starting with the Carmack Amendment of 1906, federal statutes have incorporated the common law rule that carriers are liable for loss or damage in shipment. The amendment went further in providing that this liability should apply regardless

of any of the provisions of the bill of lading or any contract. The law said, in other words, that it was a matter of public policy that carriers should be responsible for loss or damage and could not bargain away this responsibility.

Liability for loss or damage, by all types of carriers, is now governed by Section 20, Paragraph II of the Interstate Commerce Act which provides, in part:

"That any common carrier, railroad or transportation company . . . receiving property for transportation . . . shall issue a receipt or bill of lading therefor, and shall be liable to the lawful holder thereof for any loss, damage, or injury to such property caused by it or by any common carrier . . . to which such property may be delivered or over whose lines such property may pass . . . and no contract, receipt, rule, regulation, or other limitation of any character whatsoever shall exempt such common carrier. . . . Provided further, that it shall be unlawful for any receiving or delivering carrier to provide by rule, contract, regulation, or otherwise a shorter period for the filing of claims than nine months, and for the institution of suits than two years. . . ."

Limitation of Loss

Without any further qualification, this provision would work a severe and unreasonable hardship on carriers. The carrier might be liable for an indefinite sum, especially for the loss of or damage to highly valuable articles. Because of this problem, the Section just quoted permits a carrier to limit its liability with respect to property "received for transportation concerning which the carrier shall have been or shall hereafter be expressly authorized or required by order of Interstate Commerce Commission to establish and maintain rates dependent upon the value declared in writing by the shipper or agreed upon in writing as the released value of the property . . ." This feature of the law has been effectively used by carriers, and purchasing agents should bear in mind that the amount recoverable for loss or damage is usually limited to a declared value. In practice, however, this is generally adequate to cover the actual cost of most purchased items.

Carriers are not absolutely and unconditionally responsible for loss or damage under all circumstances. The following are recognized at law and contained in the Uniform Bill of Lading as exceptions to liability. Loss resulting from:

- (1) Acts of God
- (2) Act of the public enemy
- (3) The authority of law
- (4) The acts or defaults of the shipper
- (5) Natural shrinkage or deterioration

Under the exception relating to Acts of God, the carrier will be excused for loss or damage resulting from floods, hurricanes, lightning and other unusual and unexpected natural occurrences. Case decisions make it clear, however, that this exception does not cover usual or foreseeable weather conditions and does not excuse, for example, failure to cover shipment to protect against a hard rain or severe windstorm. Neither does it excuse failure to protect against severe heat or cold during that part of the year when such temperatures might occur.

It was held, for example, that a railroad having several hours' notice of rising waters was liable for loss of flour loaded in rail cars. The court reasoned that the carrier, having the means of doing so, was negligent in not removing the cars to higher ground and could not disclaim liability on the basis of an Act of God.

The other exception of common importance to purchasers is with respect to "defaults of the shipper." This would include situations in which goods were improperly packed when delivered to the carrier or were in poor condition at time of shipment.

Concealed Loss or Damage

The most prolific source of disagreement between carriers and shippers is in the matter of concealed loss and damage. From the carrier's viewpoint there is often reason to question whether the sealed packages delivered for shipment did, in fact, contain the articles reported and whether these articles were then in good condition. There may be, likewise, a question as to whether the loss or damage actually occurred *after* delivery to the consignee or purchaser. Obviously, the carrier is vulnerable to unfounded or fraudulent claims.

It is not surprising to find, therefore, that the law places the burden on the claimant in concealed loss and damage claims to establish that the missing merchandise was actually shipped and was missing at the time of delivery to consignee, or in the case of damage to show proper packing and good condition at the time of delivery for shipment.

Examination of court decisions will give little encouragement to claimants. A very strict rule of evidence has been invoked in requiring the claimant of concealed loss or damage to prove every element of the case.

For example, in a Louisiana case it appeared that neon signs had been shipped from Wisconsin to Louisiana and, on arrival, it was found that several neon tubes were broken. At the trial the plaintiff failed to introduce evidence by the ship-

per that the tubes were intact at time of loading on the carrier and, because of this, judgment was for the defendant.

The cases make it clear that the carrier will not be liable unless it is given a reasonable opportunity to inspect goods with respect to which concealed shortage or damage is claimed. If the goods are destroyed without giving this right, the carrier cannot be held responsible.

The problem of concealed loss and damage presents a difficult question of customer relations for rail and motor carriers. From a practical standpoint, it will be much to the advantage of both the carrier and the purchasing agent (if he is concerned with freight claims) to maintain good relations and adjust claims on a give and take basis.

Under the Interstate Commerce Act, claims for loss or damage may be filed with either the originating or delivering carrier and either is responsible for the claim. The law contains provisions for settlement of losses paid among the various connecting carriers which may be involved in the case.

Delayed Deliveries

The bill of lading form employed by both rail and motor carriers stipulates that the carrier is not bound to transport property other than with "reasonable dispatch." From a legal viewpoint



"Sure we all make mistakes Smith, but a barge-load! . . ."

"reasonable dispatch" is a question of fact to be determined in each individual case. Many cases have been decided on the basis of comparing the time usually taken for the movement involved with the transit time actually used.

As most industrial purchasing agents well realize, the damages resulting from delay can be very substantial. In non-manufacturing situations, severe loss can result from spoilage of perishable goods or from a decline in the market price of goods intended for resale.

Court decisions make it clear that the carrier will be liable for losses resulting from delay which is due to the carrier's negligence. But the carrier doesn't have to insure delivery at a particular time.

A common carrier cannot, legally, make a contract for special carriage or handling. For example, the carrier will not be liable for failure to transport goods on a "through train" even though its agent may have specifically promised handling in this manner. The courts have reasoned that enforcement of promises of special carriage would amount to a "preference" among shippers which is specifically forbidden by law.

In a leading case an agent of American Railway Express Co. promised a shipper that a furnace would be delivered at a certain time in Atlantic City for a trade show which was very important to the shipper's future business. When the furnace was not delivered as promised, the shipper maintained suit. In holding for the defendant, the court said "It is well established that a shipper cannot recover on a special contract to move a shipment within a specified time, for such would work an unjust discrimination among shippers. The only duty that the carrier is under is to carry the shipment safely and to deliver it at its destination within a reasonable time."

In an important Kentucky decision the evidence indicated that plaintiff had loaded a car of bananas in Montgomery, Alabama for shipment to Louisville. Evidence was also introduced to show that the normal transit time for rail movement was 27 hours, but in this case delivery was not made until 57 hours had elapsed.

The railroad offered the defense that its equipment had broken down en route, both a car coupling breakage and engine failure having occurred. But judgment was for the shipper, the court pointing out that a carrier is not excused from liability by a mere showing that its equipment broke down and had to be repaired. It must, in order to be excused, show that the defects in the equipment were not known and by reasonable diligence in inspection would not have been ascertained.

Other cases have made it clear that the carrier owes a legal duty to the shipper to inform him at the time a shipment is offered of any special conditions which will probably result in delay.

As a general rule, carriers are not liable for delays which are not negligent delays, and unusual weather conditions or other causes unavoidable and not reasonably foreseeable by the carrier will excuse delay from a legal standpoint. ► END

LARK THE FLEET CAR THAT ALL SIX BASIC

HOW DO THEY COMPARE? (specific figures) **STUDEBAKER**

Miles per Gallon	<i>24.5 in general sales work</i>
Oil Consumption	<i>None between changes</i>
Routine Maintenance	<i>5.2 miles per mile, vs. 18.4 miles</i>
Repair Work	<i>2.1 miles per mile, vs. 3.2 miles</i>
Parts	<i>1.5 miles per mile, vs. 9.0 miles</i>
Tire Mileage	<i>Over 20% better on original tire</i>
Insurance Costs	<i>1.2% less (self-insured)</i>
Space Saved in Parking Area	<i>5 cars in the space of 4 others</i>



ONLY COMPACT GIVES YOU ADVANTAGES

LARK PRESENTS PROVEN FACTS, NOT HOPEFUL CLAIMS—
ON 6-PASSENGER CARS, NOT 5-PASSENGER SUB-COMPACTS!

1. LOWEST NET COST PROVEN by original price, also official trade-in value. Depreciation on Lark fleet model 17%—best of its class. (New compacts have no resale value established yet.)

2. LOWEST OPERATING COST PROVEN by actual records of fleet operators all over the country. "Save \$40 a month on each Lark" (equipment sales company, California)—"Savings on each cab would buy a new cab in 2½ years" (taxi fleet, Massachusetts).

3. LOWEST MAINTENANCE COST PROVEN by fleet records. "Saving 33%" (taxi fleet, New York)—"Over 25,000 miles on each Lark in severe Police service—with minimum maintenance" (police department, Indiana).

4. LOWEST REPAIR COST PROVEN by fleet records. "2.1 mils per mile, against 3.2 mils per mile" (car rental, Colorado)—"No repairs, no new parts, after 10,000 miles on each Lark" (telephone company in Oregon).

5. LOWEST INSURANCE COST PROVEN by fleet operators' records (most insurance companies offer 10% or 15% premium discount on Lark-size cars, same savings possible if you self-insure.) "Have lowest available rate" (taxi fleet, Minnesota)—"Lark costs 20% less in our self-insurance plan" (bakery fleet, Arkansas).

6. BEST DRIVER ACCEPTANCE PROVEN by fleet owner reports. "In all cases our customers have been very pleased with the performance and appearance of The Larks, and we are getting repeat requests for them, the surest sign of satisfaction." (car rental, Ontario)—"All drivers prefer Studebakers to all other units" (taxi fleet, Wyoming).

We invite you to make us prove these advantages — from records of companies in your own field of business. Send this coupon!

Budget-wise buyers

LOVE THAT

LARK

BY STUDEBAKER

SEND ME PROOF OF LARK SAVINGS

Please print. Send to Fleet Sales Division, Studebaker-Packard, South Bend 27, Indiana.

NAME

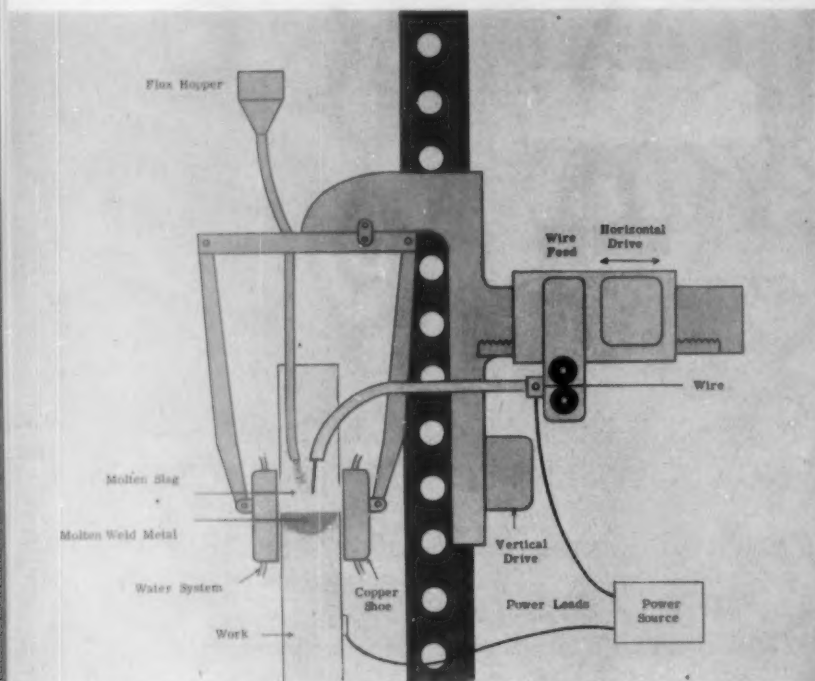
TITLE

COMPANY

ADDRESS

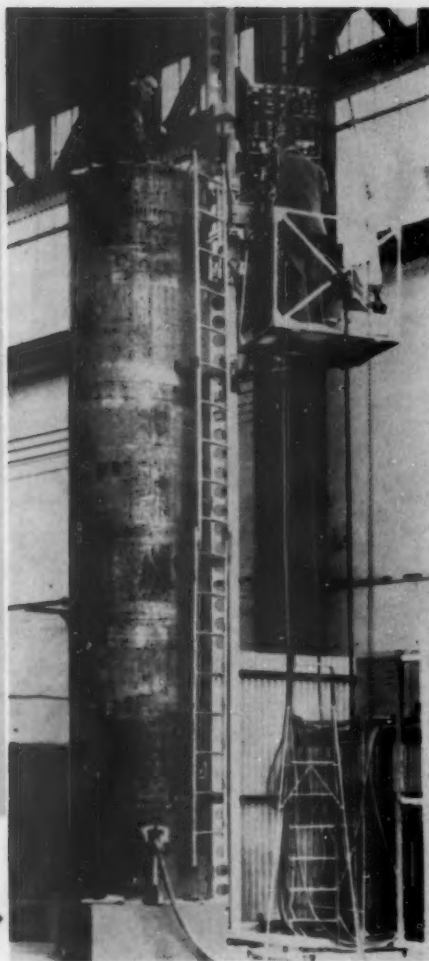
FL-14-65

Products and Ideas



The essential operating features of electroslag equipment are the flux hopper, wire feed, water system, horizontal and vertical drives, and a power source.

Longitudinal seam welding is accomplished quickly with electroslag welding technique. Here welding of ship's stern shaft is almost completed.



New Machine Welds Steel Sections Rapidly, Economically

AUTOMATIC WELDING of heavy steel sections can be accomplished six times faster by using equipment based on the electroslag principle than with standard submerged arc equipment. A new machine, called the "Vertomatic", uses a vertical welding

technique which, although known for fifty years, has not been applied on a commercial scale before. It is manufactured by the Arcos Corp., Philadelphia, Pa.

The machine can be used to weld mild steel plates and forgings from 1½ to over 10 inches

thick that can be set up in the vertical position. Sections are welded continuously and in one pass, eliminating the need for elaborate joint preparation and slag removal.

As the machine is small enough to be moved to the work, and into the field if necessary, it is expected to broaden the use of welding in fabricating heavy equipment. It is designed especially for manufacturers of processing equipment, and in shipbuilding and construction applications.

The electroslag principle is an arcless welding process that takes advantage of the ability of molten slag to carry an electric current. The resistance of the slag to the current creates a high heat that melts both filler and parent metals. In heating, they coalesce as a weld.

In submerged arc welding, on

the other hand, an arc submerged under a flux creates the heat necessary to melt the parent and filler metals and produce a weld. The voltage is between 25 and 32 volts and the depth of the slag and flux does not block arc action.

In electroslag welding, a slag pool 1 to 1½ inches deep is developed to provide a path for the flow of electric current between filler wire and the work. To obtain sufficient heat, the voltage is maintained between 45 and 55 volts.

The higher voltages used in electroslag welding produce greater heat and penetration. Because of this, it is possible to weld very heavy sections that could not be handled easily by arc welding procedures.

Types of joints that can be welded with Vertomatic equipment include butt welds, T-joints, corner welds with inside fillets, and reinforcing surface welds. The

machine has been used to make both longitudinal and girth seam butt welds in heavy-walled vessels.

Since electroslag welding requires only a nominal one-inch joint, it uses one-third to one-half less filler metal than the arc welding process for welding 6 to 12 inch thick plates. For a single electroslag electrode, deposition rate of filler metal is 35 to 45 pounds per hour. In welding very heavy plates, three electrodes are used resulting in a deposition of from 105 to 135 pounds per hour.

Little or no flux is lost through spatter or evaporation. The process consumes about 5 pounds of flux for each 100 pounds of weld metal, compared to 100 to 125 pounds of flux required with submerged arc welding.

Because of the vertical arrangement, little handling of the work and equipment is necessary. After welding has started there is

no need for repositioning. For most setups, usual rigger's handling equipment is adequate.

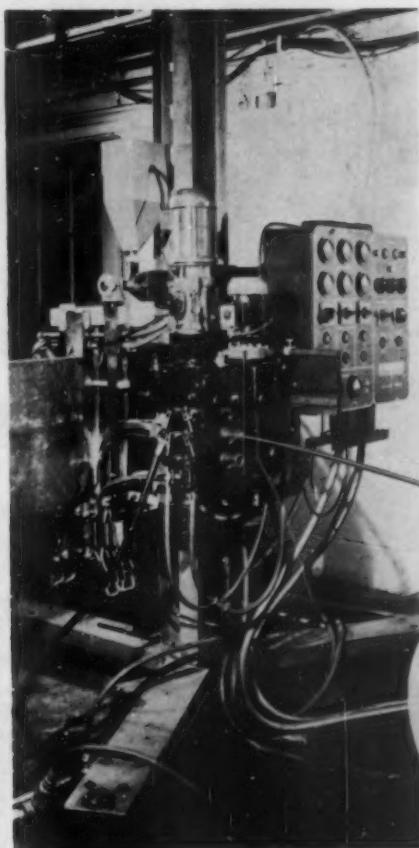
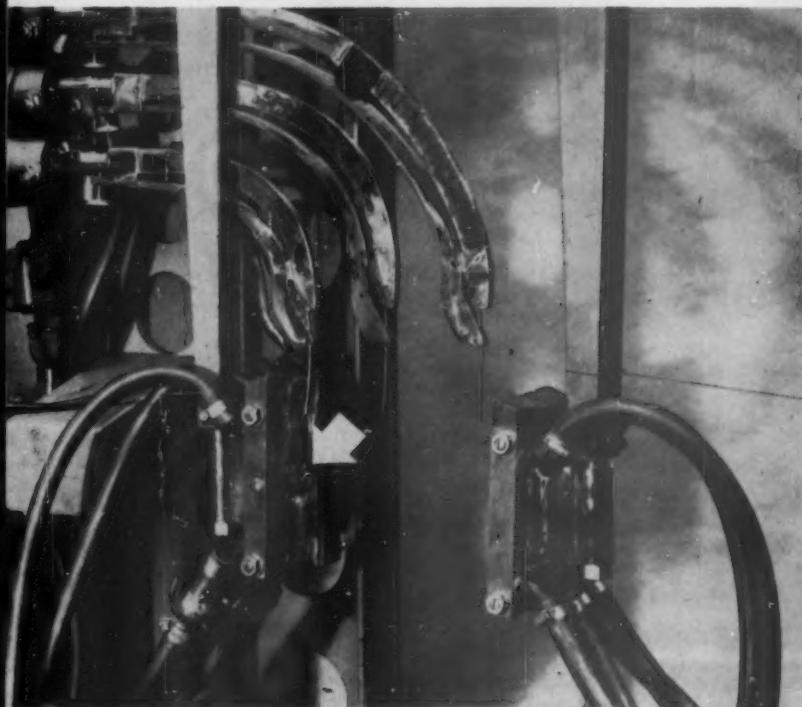
In addition to the cost savings resulting from less material usage and less handling, the productivity of electroslag welding is greater than that of arc welding. The process is continuous, operating 100% of the time. In multipass submerged arc welding, weld metal is deposited only about 35 to 65% of the time. The deposition rate in electroslag welding is itself faster. To weld a one-inch joint in plate from 3 to 12 inches thick, welding speeds from 2 to 4 feet per hour are possible.

The equipment required for electroslag welding consists of a six-foot tripod mounted on rollers and a vertical mast attached to the tripod. The standard mast length is 22 feet. A boom, or carriage, supports the welding and control units and moves on the

(Please turn to page 98)

Wire guides feed welding wire into molten slag. Water cooled shoes are held against work under pressure. Arrow indicates probes which control carriage movement.

Controls, flux hopper, and welding mechanism are mounted on boom which automatically travels up mast as weld metal is deposited.





These fluorescent lamps may look alike...

but only the Westinghouse Lamp has six

Despite similar appearance and ratings, these fluorescent lamps are *not* the same. One is a better lamp—and a better buy—because it's the only fluorescent lamp with all 6 advances described below. That lamp is made by Westinghouse. It costs you no more than any other leading brand—but it will give you years of trouble-free, efficient lighting.

1. MORE EFFICIENT PHOSPHORS—A special Westinghouse process selects Ultralume™ phosphor particles of a

size proven to give more efficient lighting.

2. BRIGHTER END TO END—Lead wires are plated with super-hard Chrome Vanadium to make sure Westinghouse tubes *stay* bright, end to end.

3. BUILT-IN "SHOCK ABSORBERS"—Specially designed Westinghouse anodes act as buffers to cushion the terrific shock of electron bombardment and improve lamp life.

4. "RAINCOATS" FOR RELIABLE STARTING—Silicone "raincoats"



important advances that make it a better buy!

disperse moisture which can collect on exterior surfaces and prevent lamps from starting.

5. MIXED GASES—Westinghouse uses a precise mixture of certain rare gases, under exact pressure, to improve the light output.

6. TRIPLE-COILED ELECTRODES—To protect electrodes from the sudden electron bombardment when the lamp is first turned on. Emission material is quickly heated, fully protected.

Regardless of the type or wattage of fluorescent lamps you buy, you will get better value, more light for your money, and longer, trouble-free service if you specify and insist on Westinghouse fluorescent lamps. Westinghouse makes a complete line, from tiny 4-watt lamps for instrument lighting to the giant 96-inch Super-Hi™ Lamps for store, street, and factory lighting. Contact your authorized Westinghouse lamp agent or nearest Westinghouse sales office.

YOU CAN BE SURE...IF IT'S **Westinghouse**
 WESTINGHOUSE LAMP DIVISION, Westinghouse Electric Corporation, Bloomfield, N. J.

For More Information Write No. 206 on Inquiry Card—Page 32

Hints on fluorescent starter selection



TO PREVENT ONE LAMP BURNING OUT BEFORE THE OTHERS IN 2- OR 3-LAMP FIXTURES . . .

Use General Electric FS-400 Watch Dog* Starters. A special glow switch in these starters blocks voltage surges and damaging instant starts in the "lead" lamps of lead-lag circuits — prevents the common condition where lead lamps fail prematurely. You save on lead lamp replacement and over-all maintenance costs with General Electric FS-400 Watch Dog starters. You also get: Automatic cutout of blinking lamps — better ballast protection — up to 10 times longer starter life.

To get more money-saving hints, ask your General Electric distributor for the "G-E Starter Selection Chart and Maintenance Guide For Fluorescent Lighting." General Electric Company, Wiring Device Department, Providence 7, Rhode Island.

*Registered Trade-mark of
General Electric Company



GENERAL ELECTRIC

For More Information Write No. 301
on Inquiry Card—Page 32

Products

(Continued from page 95)

mast as the weld metal solidifies.

The welding mechanism consists of one, two, or three wire guides (as required) and a drive mechanism that moves the guides laterally. Two water cooled copper shoes, positioned by holding clamps, bridge the gap of the work. Two probes are located in the shoe faces. One of these actuates the upward movement as weld metal is deposited, the other controls flux flow to the area. A control panel and flux hopper are also mounted on the boom along with the motor drive which moves the entire structure upward as welding progresses.

In addition to the mast and boom assembly, specially built transformers are required, one for each electrode. A cabinet houses the relays actuated by the control panel and feed reels hold the large coils of welding wire.

Two kinds of wire may be used: solid wire which needs separate deoxidizing flux fed from the hopper or a flux cored (or composite) wire. With cored wire, flux can be deposited more deeply into the slag or the welding wire metal analysis can be controlled by introducing appropriate alloys through the flux.

All operations are directed from the control panel mounted on the boom. Normally, welding is automatic but manual operation is possible. In starting, the pool of molten slag is built up by the operator. During this time he makes the necessary adjustments in welding controls and transformer output.

Once the electrical conditions are set for the work being done, operation is fully automatic. Wire is continuously fed to the slag and is moved back and forth through the molten pool. This stirring action distributes heat uniformly. The probes in the copper shoes sense build-up of weld-metal and initiate upward movement of the boom as it cools.

Vertical, traverse, and wire feed speeds can be set by the operator to fit the work. A new coil of wire can be inserted without stopping the machine.

Write No. 87 on Inquiry Card—Page 32

All-Purpose Disposable Safety Suit



A new all-purpose disposable plastic safety suit is intended to protect workers in all industrial operations involving exposure to chemicals, water and excess dust or dirt. Inexpensive, lightweight plastic suit is resistant to most acids, alkalis and fire, as well as being waterproof and unaffected by oil or grease. Light yellow polyvinyl chloride slip-over jacket and trousers fit comfortably over ordinary work clothing. Elastic tape at neck, wrists and ankles insures a tight fit for additional protection. **Safety First Supply Co., 421 Magee St., Pittsburgh 19, Pa.**

Write No. 30 on Inquiry Card—Page 32

Three New Rust Preventives

Three new rust preventive products are now available, one for cast and malleable irons, sintered metals and steel, and two specifically for steel. The first is added to either hot or cold water rinses; it is especially adapted to porous metals. No residue is left on surface, and organic coatings can be applied without further treatment. Added to hot or cold water rinses, second preventive adds improved corrosion resistance to steel surfaces and facilitates drying. Third product is intended particularly for power washers. **Mitchell-Bradford Chemical Co., Wampus Lane, Milford, Conn.**

Write No. 31 on Inquiry Card—Page 32

PURCHASING

Riverside continuous casting saves you production time, cuts rejects

Phosphor Bronze and other copper-base strip, rod, and wire from Riverside produces consistently better end products for you—free of weak points that result in rejected pieces or whole batches.

How do we do it? By continuous casting, a special Riverside-Alloy process—a process that eliminates air holes and impurities, leaving a dense, homogeneous casting for better wire-drawing and other fabrication requirements.

Get the full cost-saving story from Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Riverside, New Jersey.

good
riddance
to
"Swiss
Cheese"
castings!



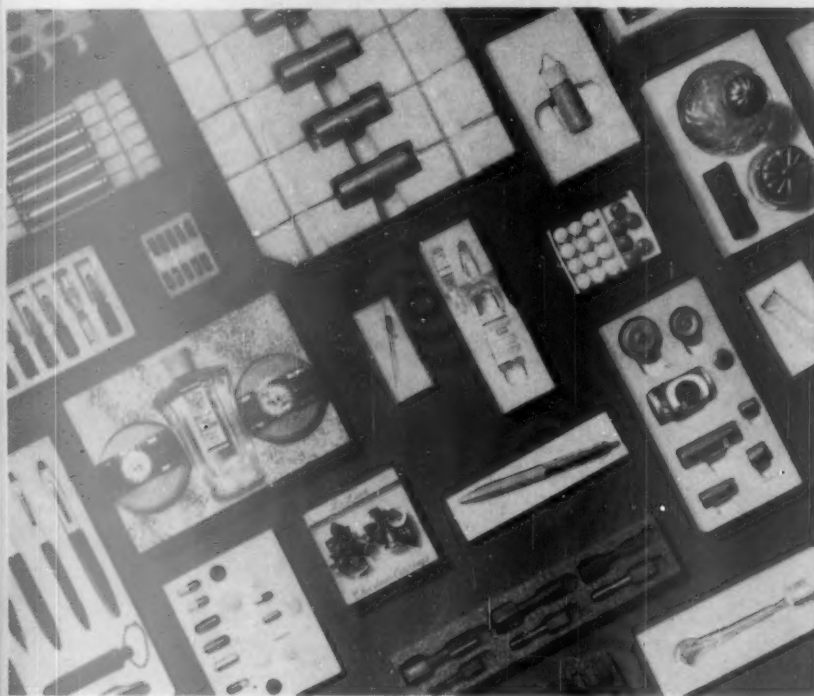
**RIVERSIDE-ALLOY METAL
DIVISION**

PORTER

H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION; PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION, H. K. PORTER COMPANY de MEXICO, S. A.; and in Canada, Refractories, "Disston" Tools "Federal" Wires and Cables "Nepocoduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

Products and Ideas



Plastic foam platforms are lightweight and versatile. They can be used to package electronic parts, instruments, pharmaceuticals, and many other small or fragile products.

Pack in Foam For Featherweight Protection

THE PURCHASING AGENT for a pharmaceutical house needed packaging that would protect highly fragile pills—but still be lightweight and attractive.

A purchasing agent for an electronics company wanted maximum protection with minimum bulk in a package to protect tiny, valuable transistors.

A P.A. for a jewelry firm was looking for a material which, while relatively inexpensive, would make an attractive counter display material and would not tarnish the product.

In spite of this variety of problems, each was solved by using styrofoam plastic platforms, tailored to the application by the Foampak Corporation of Philadelphia.

Foampak's precision machinery is custom-made to cut styrofoam, the lightweight Dow Chemical plastic foam product. Using either hot wire cutters or high pressure stamping dies, the machines keep close tolerances.

From 1/32 to 1/64 inch is considered routine. The machines work at high speed. On an aver-

age day, from 75,000 to 100,000 packaging platforms are turned out.

With dies built to handle each specific cutting job, it is possible to fabricate any size or shape of cavity. Also many different groove sizes can be cut in the same platform. Combined with close tolerances that insure perfect fits both for the products and the outer box coverings, the versatility of this packaging provides for many industrial applications, including:

Pharmaceuticals. Millions of vials and pills are shipped annually on foam platforms. One unique packaging device is a slim folder grooved in the center to a thickness of 1/32 inch to form a hinge. Pill cavities are stamped into the folders. The result is attractive, inexpensive protection for sample mailings of pills. Other pharmaceutical package platforms are for ampules that must fit tightly during shipping but still be easy to slip out.

Electronics. Package platforms are designed and fabricated to hold as many as 100 transistors. Sometimes these transistors vary in size. But because a wide variety of cavities and grooves can be fabricated in the same platform, the number of platforms which an electronics manufacturer must stock can be kept at a minimum. One firm, for instance, reduced its platforms from a total of 70 to just 12.

Instruments. Versatility and protection are most important for this application. One platform for a recording instrument scribe, for instance, needed a device that would keep the point completely out of contact but which would tightly contain the rest of the unit to avoid springing it. Foampak came up with a platform which used a highly precise cavity and groove series to do the job.

Novelties. Packaging must be inexpensive, light, and attractive for counter displays. Foam packaging meets all these requirements. In some cases, styrofoam has produced savings of 50% in both postage costs and bulk.

Write No. 88 on Inquiry Card—Page 32



better way
to take a load
off your mind

WONDERWALL is the new bag that's taking a big load off the minds of multiwall users by drastically reducing breakage. WONDERWALLS also usually cost less than old-fashioned, ordinary kraft multiwalls because fewer or lighter plies do a better job.

The secret lies in the paper!

WONDERWALLS are made with Kraftsman Clupak* paper, brought to commercial perfection by West Virginia. This unique, stretchable paper absorbs far more impact than regular kraft without breaking.

WONDERWALLS are another example of how West Virginia delivers outstanding quality with economy. Through a research investment of over \$3,000,000 annually, and almost total utilization of raw materials, we are able to serve our customers with money-saving efficiency.

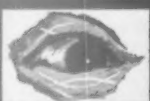
For a better multiwall, get the facts on WONDERWALL, the new, tougher multiwall. Write Multiwall Bag Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

*Clupak, Inc.'s trademark for extensible paper, manufactured under its authority.



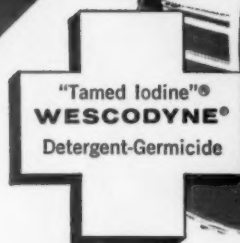
**West Virginia
Pulp and Paper**

For More Information Write No. 208 on Inquiry Card—Page 32



SEE a demonstration by a specialist

**KILLS
"ASIAN FLU"
VIRUS**



for FREE demonstration or literature address:
WEST CHEMICAL PRODUCTS INC., 42-24 West St., Long Island City 1, N. Y.
Branches in principal cities • IN CANADA: 5621-23 Casgrain Ave., Montreal

For More Information Write No. 209 on Inquiry Card—Page 32



Take Your Pick OF THESE BROOK A.C. MOTORS



OPEN DRIP PROOF
NEMA RERATE.

**EITHER WAY
YOU WIN!**

OPEN DRIP PROOF
OLD FRAME.



THE Open Drip Proof NEMA Rerate Motor occupies less space—weighs 12 to 15% less than the Open Drip Proof Motor in the old frame. This is no case of "Riding horse versus draft horse"—both motors have equal stamina. Some prefer the old frames, especially where space is no factor. Brook warehouses coast-to-coast carry both types in stock. You can't find a better motor at any price, yet Brook Motors cost substantially less, because of volume production, modern techniques, world-wide distribution and a realistic pricing policy. Brook Motors available from 1 to 600 H.P. All standard enclosures. Write for literature and name of your Brook Dealer.

world's most respected motor
BROOK MOTOR CORPORATION

3302-04 W. PETERSON AVE., CHICAGO 45, ILL.

In Canada: Brook Electric Motors of Canada Ltd.,
250 University Ave., Toronto, Ont.



For More Information Write No. 210 on Inquiry Card—Page 32

Products

Lightweight, Sturdy Pallet Is Expendable



A new expendable pallet looks and loads like a conventional pallet but costs less than a dollar and may be shipped with the load without deposit or return agreement. Weighing less than 7 lbs., new pallet is laboratory tested to hold more than 28,000 lbs. Low cost and weight are due to corrugated paper body; strength is due to wood veneer reinforcing. No special handling equipment is required. Shipped to user knocked-down, pallet is assembled without staples or glue in less than a minute by use of inexpensive plastic "jig." **Materials, Inc.**, P.O. Box 24, Oakland 4, Calif.

Write No. 32 on Inquiry Card—Page 32

Coating for New or Old Concrete Floors

A new, relatively inexpensive, epoxy-based liquid coating penetrates deeply into the porous surface of old or new concrete floors and provides excellent sealing protection against traffic wear and corrosive deterioration. Ready-to-use sealer can be applied with ordinary paint brush, paint roller, or spray gun. After overnight hardening, glossy skin prevents "dusting" of concrete surface and resists water, oils, greases, alkali solutions, etc. **Permagile Corp. of America**, 34-43 Fifty-Sixth St., Woodside, N.Y.

Write No. 33 on Inquiry Card—Page 32

For More Information about ad on facing page Write No. 211 on Inquiry Card—pg. 32—
PURCHASING



consistent
quality
production
depends on...



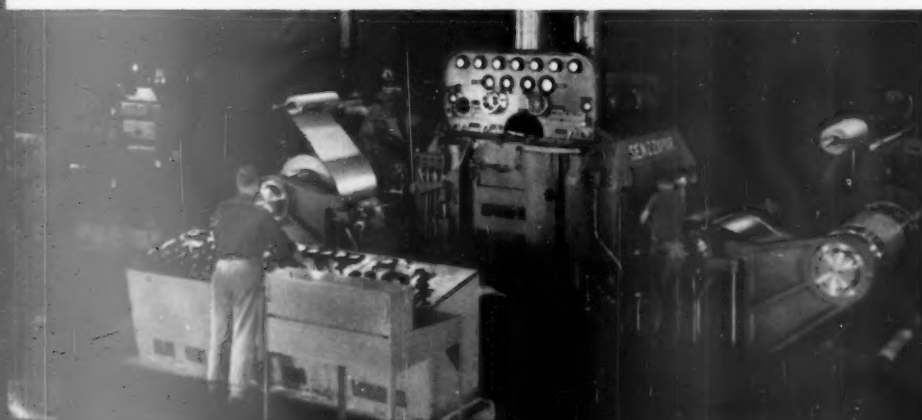
consistent quality



You can do more with Consistent Quality stainless steel because it increases yields by reducing rejects due to metal variations, eliminates production delays, and lowers tooling costs. In effect it insures your profit.

J&L Consistent Quality is the result of unique melting practices combined with the industry's most advanced facilities for producing stainless sheet, strip, bar and wire. J&L actually leads the industry in melt shop standards, the point where quality starts; and maintains that quality through every production operation.

To solve your production problems caused by quality variations in materials, contact your J&L distributor today.



Sendzimir mill rolling assures precise gauge accuracy coil after coil.



Every phase of melting from the selection of scrap to the pouring of ingots is carefully controlled with laboratory precision by constant testing.

The quality of billets and slabs governs the quality of finished products.



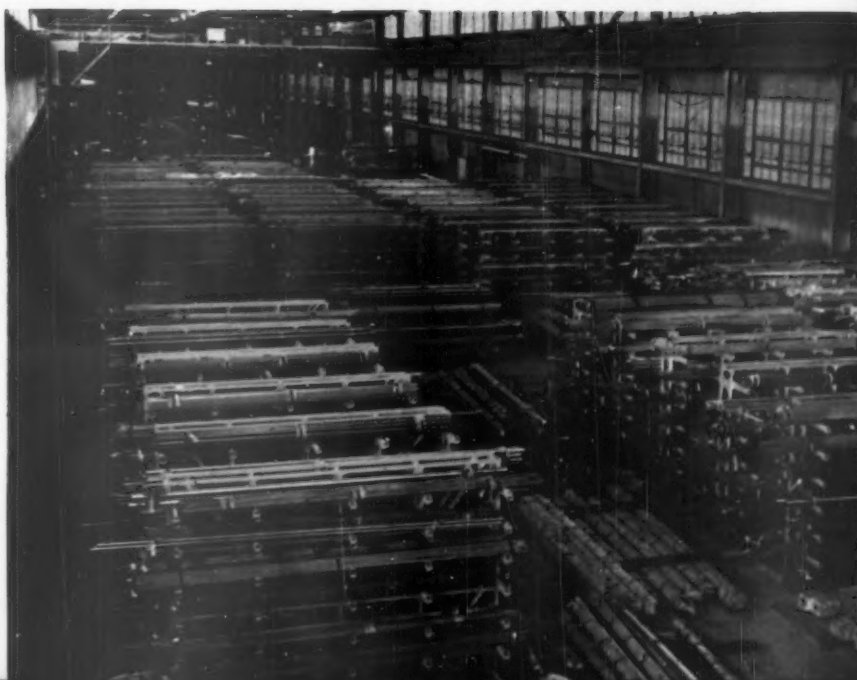
Conditioning of slabs and billets to exacting standards assures flawless surface finishes.

stainless steel



Typical of all J&L equipment is the industry's most modern 4-block wire drawing unit.

The industry's largest bar inventories guarantee fast service. Comparable inventories of sheet and strip will assure speedy service for flat rolled products.



consistent quality
stainless steel

is as near as your telephone



WESTERN UNION call operator 25

(EFFECTIVE APRIL 1960)

Your J&L stainless steel distributor can serve you better *because J&L serves him better*, backing him with the full facilities of J&L's Stainless and Strip Division.

Your J&L distributor can reduce your costs by providing a complete range of pre-production services, and doing it economically! He can save you the capital investment required to maintain long term inventories; and can help you eliminate the costs of overhead connected with stocking, accounting, and the inevitable losses incurred through waste and obsolescence due to specification changes.

Technical assistance in solving production problems is also available from your J&L distributor. And when

those problems are connected with an application using stainless steel, J&L's own staff of technical specialists will promptly answer your distributor's call for additional help.

Even when advanced research is required you can call on your J&L distributor in confidence. He will be happy to discuss your problems because he knows he is backed by one of the world's most respected teams of metallurgists—J&L's own staff in laboratories at Detroit and the famous Graham Research Laboratories at Pittsburgh.

Your J&L distributor is as near as your telephone. Call Western Union Operator 25 for the name of your J&L distributor of Consistent Quality stainless steel.



This manual is your guide
to the selection of stainless
steel sheet and strip.
Write for your free copy.



Plants and Service Centers.

Los Angeles • Kenilworth (N. J.) • Youngstown • Louisville (Ohio) • Indianapolis • Detroit



STAINLESS

SHEET • STRIP • BAR • WIRE

Jones & Laughlin Steel Corporation • STAINLESS and STRIP DIVISION • DETROIT 34

Products

Motor-Load Indicator Measures Working Component



A new motor-load indicator for use on single- or three-phase, 50 or 60 cycle, induction motors is now available. Designed for use with a 5 amp. current transformer, panel instrument measures the useful or working component of load current, rather than total current magnitude only. Since induction motors operate at different power factors, dependent upon load, this device gives more accurate indication. Meter is calibrated for 190-280 volts, or for 350-550 volts. Housed in a flush-mounted case with either a 4 in. square or 4½ in. round mounting flange. Westinghouse Electric Corp., P.O. Box 2099, Pittsburgh 30, Pa.

Write No. 34 on Inquiry Card—Page 32

Air Sanitizer Controls Odors at Source

A new air sanitizer for industrial plants and food processing industries controls odors at the source rather than "masking" or replacing one odor with another. When area is sprayed, molecules of new product combine with odor molecules to form odorless compounds so that no odor remains. Product is also antiseptic and reduces microbe population. Air sanitizer is available in concentrate form to be dissolved in water, as well as in individual aerosol spray cans. It can be used to wash down floors and walls as supplemental treatment. Turgasept Co., 505 Fifth Ave., New York 17, N. Y.

Write No. 35 on Inquiry Card—Page 32



Quaker Thermoid THUNDERBIRD ...the toughest (yet most flexible) air hose you've ever used



Give Thermoid-Quaker THUNDERBIRD Wire-Braid Hose the works . . . the roughest kind of impact, twisting, crushing, inside

pressures. It'll take everything you can deal out, and then some.

THUNDERBIRD takes this punishment while remaining the most flexible, non-kinking air hose you've set eyes upon. Accurately-controlled angle of wire braid assures this extreme flexibility. Tough neoprene tube resists hot or cold oil. Yellow neoprene cover provides maximum abrasion-resistance and high visibility even in the dark.

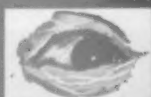
Sizes from ¾" to 4" I.D. Working pressures to 400 psi air or 2,000 psi water. Lengths to 50 feet. Ask your Thermoid distributor about THUNDERBIRD, or write Thermoid Division, H. K. Porter Company, Inc., Tacony & Comly Sts., Philadelphia 24, Pa.

THE THERMOID **PORTER** DIVISION

H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRATORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION. H. K. PORTER COMPANY DE MEXICO, S. A.; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepocduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

For More Information Write No. 212 on Inquiry Card—Page 32



SEE a demonstration by a specialist

**"OUTDOOR
FRESHNESS"
FOR
WASHROOMS**



for FREE demonstration or literature address:

WEST CHEMICAL PRODUCTS INC., 42-24 West St., Long Island City 1, N. Y.
Branches in principal cities • IN CANADA: 5621-23 Casgrain Ave., Montreal

For More Information Write No. 213 on Inquiry Card—Page 32



A NEW FASTENER... A NEW TYPE OF FASTENER

**DIE CAST ROUND-HEAD
THUMB NUTS & SCREWS**

with GRC's exclusive

WIDE GRIP feature



Head Diameters
1/2" thru 1 1/8"
Thread Sizes
No. 4 thru 7/16

Mass produced in rust-
proof zinc alloy at low
cost, with eye appeal to

help sell your product . . .

generous width tops have deep fluted edges for firm, comfortable
grip. Closed or open end nuts. 1-pc. die cast or 2-pc. assembled
screws with and without shoulders.

OTHER GRC FASTENERS

Die Cast Zinc Alloy
Wing Nuts. Cap Nuts.
Wing Screws. Rivets

Molded Nylon
Screws. Washers.
Screw Insulators

Write Now for prices and
GRC's New Fastener Catalog.



World's Foremost Producer of Small Die Castings

25 years of
progress in
tiny parts

GRIES REPRODUCER CORP.

39 Second St., New Rochelle, N. Y. • New Rochelle 3-8600

SEE US AT THE IRE — BOOTH #4110



For More Information Write No. 214 on Inquiry Card—Page 32

Products

**Size Finder Cuts
Grinding Time**



A grinder in a new model offers significant savings with a newly developed size finder. Development cuts set-up and operating time for precision grinding shafts with two or more different diameters. Small to medium size lots of multiple diameter shafts for machine tools, electric motors, pumps, food machinery, etc., are ideal for this machine. Size finder is direct reading counter which is calibrated to the grinding wheel feed handwheel. Any diameter to be ground within range of machine can be dialed on size finder by turning handwheel. **Landis Tool Co., Waynesboro, Pa.**

Write No. 36 on Inquiry Card—Page 32

**New Line of Metalized
Ceramic Components**



A complete new line of metalized ceramic components is now available for use in electronic devices such as transistors, diodes, rectifiers, resistors, capacitors and transformers. Included are conductive coatings of silver and platinum with electroplated coatings of copper, nickel, silver and tin. Components include both steatite and alumina ceramics in tubes, plate rods and custom shapes. **Metalizing Industries, Inc., 338 Hudson St., Hackensack, N.J.**

Write No. 37 on Inquiry Card—Page 32
PURCHASING

How to keep in-line drives in line with today's cost-reduction demands

SPECIFY

BOSTON *gear* OPTIMOUNT®

HELICAL GEARED
RATIOMOTOR

~~NOT
GEARHEAD MOTOR~~

Meet any in-line mounting conditions
with standard models
FROM STOCK

OPTIMOUNT provides choice of 4 shaft positions when mounted in either base

Advt. copyright by Boston Gear Works

OPTIMOUNT Ratiomotor adaptability opens up endless opportunities for highest efficiency in drives once restricted by the mounting limitations of gearhead motors. With OPTIMOUNT optional mounting, you can choose from 456 combinations and get the arrangement you want, ready to install, FROM STOCK.

You can order horizontal or vertical base mounted — with any shaft position needed — for any floor, wall, or

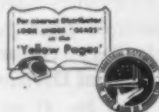
ceiling mounting position. Any size you need, with single or double helical gearing, for 1/6 to 10 hp drives. Motor is readily detachable, can be changed in minutes. You can also order OPTIMOUNT without motor, if desired, ready for attachment of motors you have purchased separately.

Get complete information. Ask for Catalog No. 57. Boston Gear Works, 74 Hayward St., Quincy 71, Mass.

CALL YOUR
NEARBY

BOSTON *gear*
DISTRIBUTOR

— STANDARDIZATION PAYS —

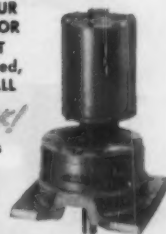


**ORDER FROM YOUR
LOCAL DISTRIBUTOR**
Get OPTIMOUNT
arranged as specified,
READY TO INSTALL

FROM STOCK!
at factory prices



Horizontal
base mounted



Vertical
base mounted

Products

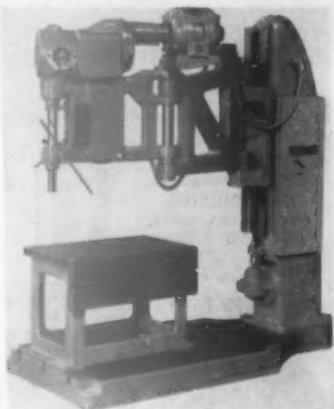
Safe and Strong Lightweight Ladder



A new type of stepladder is particularly suitable for use in industrial plants and in power and electrical work. Fiberglass reinforced plastic ladder combines non-conducting qualities with lightweight strength of metal. Tested under room conditions of 50% relative humidity, ladder did not break down when a maximum of 120,000 volts was applied between the rungs. Flat steps and back rungs are of aluminum. Safety shoes are an integral part. Available in 3 to 18 ft. sizes, in one foot increments. All sizes above 3 ft. have pail rest. Putnam Rolling Ladder Co., 32 Howard St., New York 13, N.Y.

Write No. 38 on Inquiry Card—Page 32

Improved Sensitive Radial Drilling Machine



An improved, sensitive radial drilling machine incorporates a completely new electrical system. Push-button station is located at drill head and main electrical enclosure is set into the machine

column. Radial drilling and tapping machine utilizes unique jointed arm which permits ready placement of the head in relation to the work. Spindle travel is 7 in., and spindle speeds are from 95 to 1140 rpm on a 60 cycle installation; capacities are 1½ in. drill and 1 in. tap in cast iron, 1 in. drill and ¾ in. tap in steel. Foote-Burt Co., Cleveland 8, Ohio.

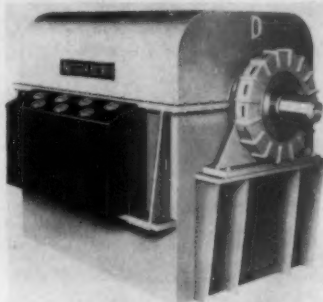
Write No. 39 on Inquiry Card—Page 32

Small, High Performance Heating Coils

Heating coils in a new line average 40% smaller than previous coils. Fin design, "flow-engineered" cast iron leader and channel-formed casing produce compact heating coil that uses only one row of tubes to produce capacities formerly achieved by two-row coils or considerably larger one-row coils. New line includes steam and hot water coils, booster coils and steam distributing tube coils. Trane Co., La Crosse, Wisc.

Write No. 40 on Inquiry Card—Page 32

Adjustable Speed Fluid Drives



A new line of adjustable speed fluid drives was developed specifically for use with "on-the-shaft" boiler feed pump arrangements. Units give a stepless, infinitely adjustable speed control, saving power over the entire operating range. They are available for use with any size boiler feed pump. Standard units can be had for either 3600 or 1800 rpm operating input speed. New design includes rugged construction, positive forced-feed lubrication and simple push-pull type speed controller. American-Standard Industrial Division, Detroit 32, Mich.

Write No. 41 on Inquiry Card—Page 32

ASARCO

DISTRIBUTORS for ASARCON
CONTINUOUS-CAST BRONZE

MISSOURI
Kansas City
Associated Bearings Co.
VALENTINE 1-5383
Hubbell Metals, Inc.
BALTIMORE 1-7760
St. Louis
Hubbell Metals, Inc.
FRANKLIN 1-0312
NEBRASKA
Grand Island
The Island Supply Co.
DUPONT 2-8567
Omaha
T. S. McShane Co., Inc.
JACKSON 1273

NEW JERSEY
Carlstadt
E. A. Williams & Son
GENEVA 8-0800
MARKET 31929
(New York LA 4-9546)

NEW YORK
Federal Foundry Sales, Inc.
MARKET 2-6330
Perth Amboy
Gregg & Brass Foundry
HILLCREST 2-0906

NEW YORK
Brooklyn
Hansley, Inc.
STERLING 8-1144

NEW YORK
Kenscroft Associates, Inc.
RIVERSIDE 1520
RIVERSIDE 2020

RECHESTER
Ontario Metal Supply, Inc.
HAMILTON 6-1630

SYRACUSE
Molson Bronze Foundry, Inc.
GLENNVIEW 4-3231

TROY
The Troy Belling & Supply Co., Inc.
AS 2-4920 (in Albany 3-6121)

OHIO
Akron
Akron Welding and Spring Co.
JEFFERSON 5-2187

CLEVELAND
Copper & Brass Sales, Inc.
ENIDCOTT 1-5757
The Bearing Bronze Casting Co.
MICHIGAN 1-6520

CINCINNATI
Reliable Castings Corp.
KIRBY 1-2527

COLUMBUS
Williams & Co., Inc.
AXMINSTER 4-1623

DAYTON
The Bristol Brass Corp. of Ohio
FULTON 8185

DALE
The Sager Brass Company
CHERRY 9-5321

GREENWOOD
Williams & Co., Inc.
GREENWOOD 5-0661

PENNSYLVANIA
Easton
R. T. Schaller Co.
EASTON 2-2435

LABRUE
Labrue Foundry Machine
& Supply Co.
KEYSTONE 7-3341

PHILADELPHIA
Brass & Copper Sales, Inc.
GLADSTONE 7-2540

RENEWAL SERVICE, INC.
BALDWIN 9-6330

PITTSBURGH
Pennsylvania Industrial
Supplies Co., Inc.
ALLEGHENY 1-5010

PITTSBURGH BRASS MFG. CO.
ATLANTIC 1-5751

RHODE ISLAND
Providence
Clifford Metal Sales Co., Inc.
UNION 1-4100

SOUTH CAROLINA
Greenville
J. M. Tull Metal & Supply Co., Inc.
CEDAR 3-8366

TENNESSEE
Memphis
Memphis Bearing & Supply Co.
JACKSON 6-7543

NASHVILLE
Dixie Bearings, Inc.
CHAPEL 2-7551

TEXAS
Beaumont
Standard Brass & Mfg. Co.
TERRELL 3-2641

HOUSTON
Standard Brass & Mfg. Co.
CAPITOL 56531

PORT ARTHUR
Standard Brass & Mfg. Co.
YUKON 5-5377

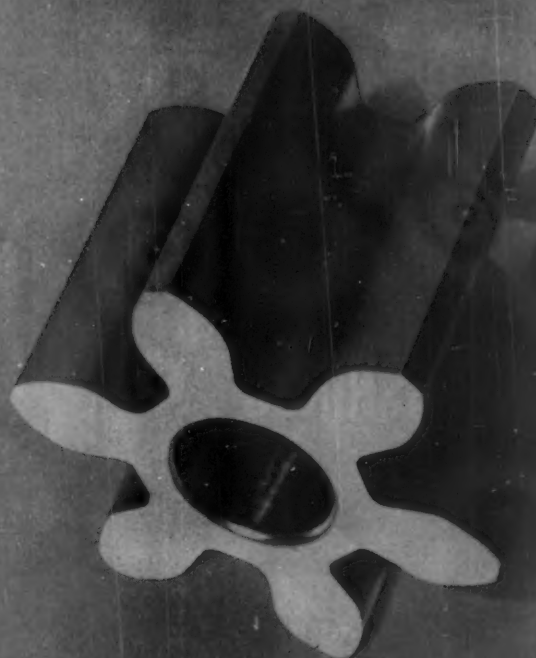
WISCONSIN
Milwaukee
Badger Bearing Co.
BROADWAY 2-0231

CANADA
Lachine, Quebec
Federated Metals Canada, Ltd.
MELROSE 7-3591

SCARBOROUGH, ONTARIO
Federated Metals Canada, Ltd.
PLYMOUTH 7-3246

For More Information Write No. 216
on Inquiry Card—Page 32

PURCHASING



Custom shapes in continuous lengths:

ASARCON.

CONTINUOUS-CAST BRONZE CASTINGS

Before you design or produce a copper base alloy part, investigate the economy and efficiency of Asarco continuous casting. You can order the alloy and shape you need, in the exact lengths you need. Continuous Cast Asarcon Bronze alloys meet SAE, ASTM, and government specifications—but they are superior to the same alloys cast other ways, in hardness, yield, tensile and impact strength. In fact, you may be able to substitute an Asarcon Bronze for an aluminum or manganese bronze. Write for complete data to Continuous-Cast Department, American Smelting and Refining Company, Barber, N. J. or Whiting, Indiana.

Immediately available from stock: **ASARCON 773 BEARING BRONZE (SAE 660)**—260 sizes of rods and tubes. Complete range of sizes from 1/2" to 9" diameters. Immediately available from stock in 105" lengths. Special shapes produced to order.

Note minimum clean-up necessary between casting of this 6-tooth pump impeller and finished part. (Illustrated parts are 4" in diameter.)

AMERICAN SMELTING AND REFINING COMPANY

ASARCO

CONTINUOUS CAST DEPARTMENT

West Coast Distributor: Kingwell Bros., Ltd., 457 Minna Street, San Francisco, Calif. In Canada, Federated Metals Canada, Ltd., Toronto and Montréal. Distributors in many principal cities.



SEE a demonstration by a specialist

NEW ECONOMY

UP TO
50%
MORE
WASHINGS

NEW!
non-depleting
LAN-O-KLEEN[®] PLUS
Hand Cleaner

for FREE demonstration or literature address:

WEST CHEMICAL PRODUCTS INC., 42-24 West St., Long Island City 1, N. Y.
Branches in principal cities • IN CANADA: 5621-23 Casgrain Ave., Montreal



For More Information Write No. 217 on Inquiry Card—Page 32

for your reference library



FREE "GUIDE" to Semiconductor Rectifier Equipment

Complete technical data—fully illustrated...all you need to know about Semiconductor Rectifier Equipment for any industrial power conversion application in your plant. Battery chargers; D.C. Power Supplies, Mag Amp Regulated; Massive Current Limiting Rectifiers used with D.C. Arc Furnaces; to complete Semiconductor Rectification Systems for the operation of electrolytic cells.

GERMANIUM—SILICON—SELENIUM... Whether your interest is practical or academic, it will be to your advantage to be well-informed on modern power conversion equipment. Send for your copy now.



THE MEAKER COMPANY

SUBSIDIARY OF **SOL-REX** CORPORATION

Electrical Division

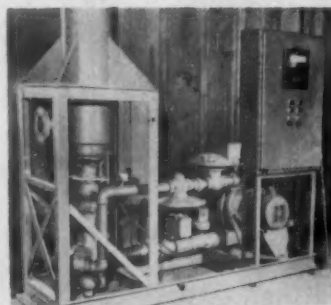
NUTLEY 10, NEW JERSEY

"Complete Semiconductor Power Conversion Systems for any AC to DC Application."

For More Information Write No. 218 on Inquiry Card—Page 32

Products

Pre-Packaged Heaters Cut Installation Costs



An established line of fired heaters is now pre-packaged to reduce installation time and cost. Heaters feature finned combustion tube and have been used for over ten years for heating wide variety of gases, vapors and liquids up to 1000 degrees F. Typical uses are for asphalt, bunker C oil, chemical gases and liquids, heat transfer oils, etc. Heaters come with all combustion, flame safety, and automatic control equipment mounted in position, wired and ready for operation. **Brown Fintube Co., 300 Huron St., Elyria, Ohio.**

Write No. 42 on Inquiry Card—Page 32

Five Fast-Drying Colored Stencil Inks



Five new fast-drying colored inks—red, blue, yellow, white and green—as well as standard black are now available for use in Stencil-matic rollers to label metal or porous surfaces. Rollers not only make stencilling easier and faster but prevent ink build-up on stencil, making them last longer and permitting the use of lighter, less expensive stencil board. **Bostitch, Inc., 2013 Briggs Dr. East Greenwich, R. I.**

Write No. 43 on Inquiry Card—Page 32

WHY LEADING MANUFACTURERS INSIST ON INLAND CONTAINERS



"We've found the best shipping containers cost the least in the long run."

All too often "bargain" shipping containers boomerang. That's when they increase cost by poor performance on the packing line, in the warehouse and in transit instead of producing the savings they seem to promise.

For this reason manufacturers of every conceivable kind of product insist on Inland quality containers. Inland containers are custom-

designed and precision-manufactured to keep packaging labor costs down, provide maximum warehousing efficiency, minimize shipping weight and safeguard that priceless asset—customer good will—by assuring factory-perfect condition when delivered.

You can always depend on Inland to furnish the *right* container for your product. Your nearby Inland Package Engineer is a corrugated shipping container specialist . . . call him for every requirement.

CALL YOUR INLAND PACKAGE ENGINEER



INLAND CONTAINER CORPORATION

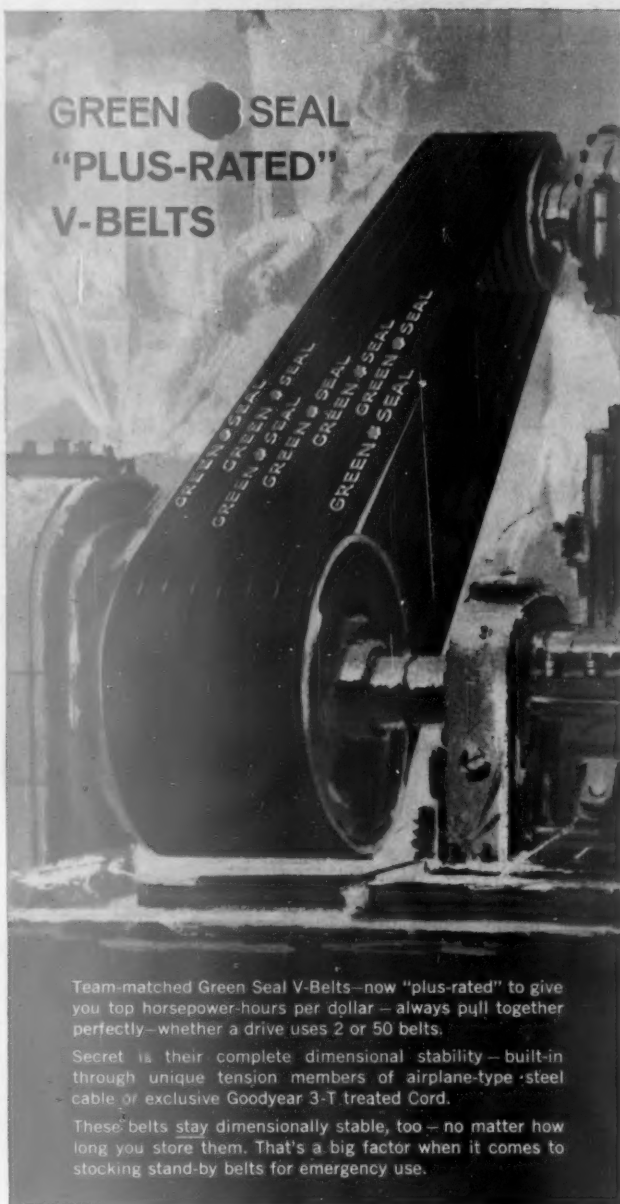
Corrugated Fiber Boxes

Mills: Macon, Georgia; Rome, Georgia. **PLANTS AND SALES OFFICES:** Indianapolis, Indiana; Middletown, Ohio; Milwaukee, Wisconsin; Evansville, Indiana; Detroit, Michigan; Macon, Georgia; Erie, Pennsylvania; Ashtabula, Ohio; Orlando, Florida; Rome, Georgia; Biglerville, Pennsylvania; Dallas, Texas; Chicago, Illinois; Louisville, Kentucky.

Other Sales Offices in Principal Cities • Consult Your Telephone Directory

to beat all your belting problems...

GREEN SEAL "PLUS-RATED" V-BELTS



Team-matched Green Seal V-Belts—now "plus-rated" to give you top horsepower-hours per dollar—always pull together perfectly—whether a drive uses 2 or 50 belts.

Secret is their complete dimensional stability—built-in through unique tension members of airplane-type steel cable or exclusive Goodyear 3-T treated Cord.

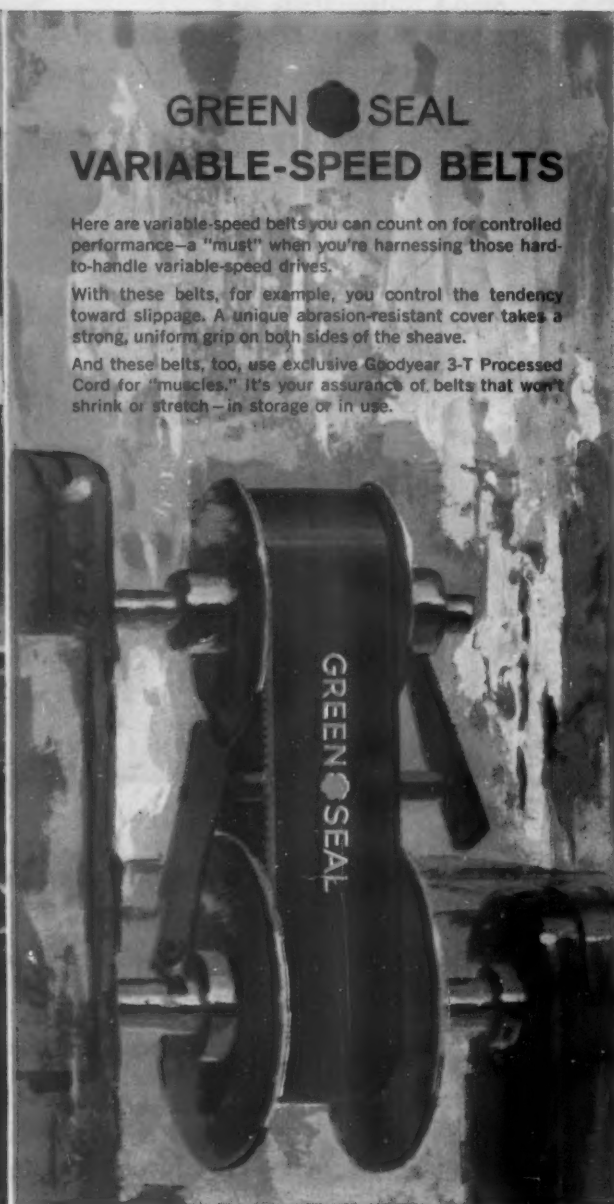
These belts stay dimensionally stable, too—no matter how long you store them. That's a big factor when it comes to stocking stand-by belts for emergency use.

GREEN SEAL VARIABLE-SPEED BELTS

Here are variable-speed belts you can count on for controlled performance—a "must" when you're harnessing those hard-to-handle variable-speed drives.

With these belts, for example, you control the tendency toward slippage. A unique abrasion-resistant cover takes a strong, uniform grip on both sides of the sheave.

And these belts, too, use exclusive Goodyear 3-T Processed Cord for "muscles." It's your assurance of belts that won't shrink or stretch—in storage or in use.



NO MATTER WHAT YOU'RE BELTING—OR WHAT TYPE BELT IT CALLS FOR—YOU CAN COUNT ON A GOODYEAR BELT FOR MAXIMUM, TROUBLE-FREE HOURS AT MINIMUM COST. JUST CONTACT THE

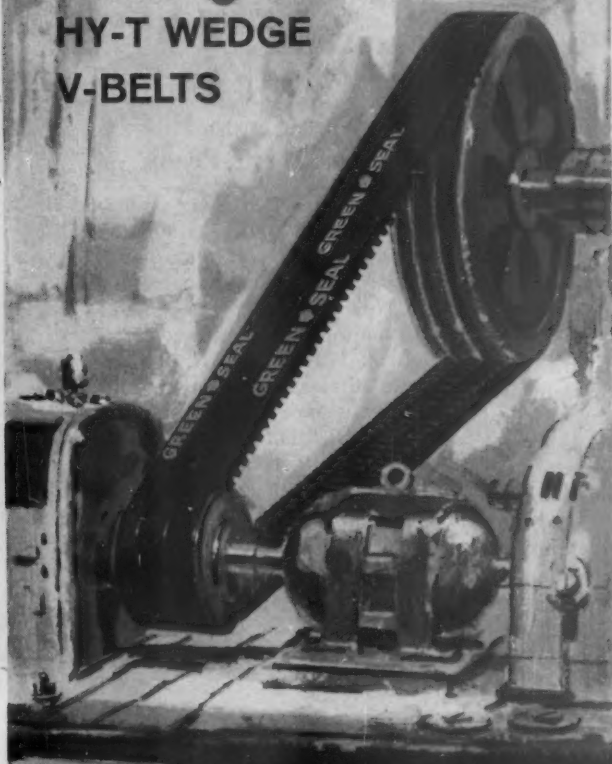
THE BIG NAME
IN V-BELTS:

GOOD



go down the line with Goodyear

GREEN SEAL HY-T WEDGE V-BELTS



With these new, "wedge" V-Belts, you can belt the same horsepower on drives as much as 50% smaller — saving as much as 20% in drive costs.

You see, the new HY-T WEDGE design eliminates excess "fat" without the sacrifice of strength. And HY-T WEDGE V-Belts are made in 3 different cross sections to meet all requirements. All 3 are oil-resistant and static-conducting at no extra cost.

And they're all Green Seal quality — the only wedge-type V-Belts offering you 3-T construction for perfect team performance.



POSITIVE DRIVE BELTS

The new P.D. Belts by Goodyear are made to order for the belt-killing drives — the ones operating under high torque and at precise speed ratios.

P.D. Belts open the door to many design advances: smaller drive sizes, lighter weight, greater precision. Moreover, maintenance needs can be cut — lubrication systems completely eliminated.

What's more, super-quality P.D. Belts by Goodyear are available for use on drives from fractional up to 600 h.p. — speeds over 10,000 f.p.m.



G.T.M.—GOODYEAR TECHNICAL MAN—THROUGH YOUR GOODYEAR DISTRIBUTOR. OR WRITE: GOODYEAR, INDUSTRIAL PRODUCTS DIVISION, LINCOLN 2, NEBRASKA, OR AKRON 16, OHIO.

YEAR

THE GREATEST NAME IN RUBBER

Green Seal, HY-T WEDGE, P.D.—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

MARCH 14, 1960

For More Information Write No. 220 on Inquiry Card—Page 32

115

3 ways to cut costs in grinding—



—all power built by Black & Decker!

Black & Decker

Speed work, cut costs with B&D accessories

Every job goes faster when you use the *right* tool . . . and the accessories *built* for that tool.



GRINDING
WHEELS



WIRE WHEEL
BRUSHES



ILLUMINATED
EYE SHIELD



SAUCER GRINDING
WHEELS

With over 2,000 accessories in the line, you're *always* right when you buy B&D because Black & Decker has the *right* one for every application.

So remember . . . whether your need is hammer tools, screw-driver bits, wire wheel brushes, grinding wheels, polishing pads or any other accessory for a Black & Decker tool . . . call your local Black & Decker Distributor. He stocks 'em all.

INSIST ON THE BEST

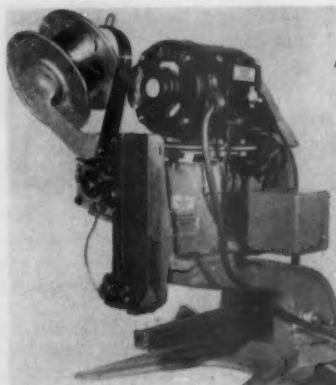
Black & Decker®

ACCESSORIES DESIGNED FOR THE TOOL

For More Information Write No. 221
on Inquiry Card—Page 32

Products

Portable Stitcher Makes Own Wire Staples



A new portable wire stitching machine, which makes and inserts staples from a coil of wire, fastens materials up to $\frac{3}{8}$ in. thickness. Machine can staple through low-carbon steel, aluminum, plastics, wood and paper. Five pound coil of wire will make approximately 60,000 staples before reloading, at cost of between three and five cents per thousand, depending on wire size. Machine can be activated by either a foot switch or a micro-switch and is available with single-trip or multiple-trip clutch. 28 different wire gauges, both round and flat, in standard finishes and colors. General Staple Co., Dept. W., 28 E. 22nd St., N.Y. 10, N.Y.

Write No. 44 on Inquiry Card—Page 32

Grinder Simultaneously Deburs and Chamfers



A twin-spindle automatic high speed grinder simultaneously deburs and chamfers the entire contour of both ends of the teeth on spur, helical or bevel (heel

and toe) gears. Grinder drives re-inforced wheels at 17,000 rpm with standard air spindles. Standard machine will handle gears from 3 to 13 in. OD; other models are available for gears to 20 in. OD. To operate, it is only necessary to start the wheel spindles, place the gear on the fixture and press the two start buttons to start the machine cycle. **Michigan Tool Co., 7171 E. McNichols Road, Detroit 12, Mich.**

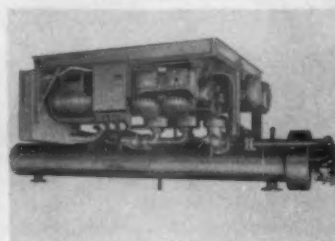
Write No. 45 on Inquiry Card—Page 32

Wire Enamel Resists Heat, Freon

A new Class F wire enamel is intended to meet the anticipated need for wire insulation with greatly increased thermal resistance. New insulation is capable of withstanding temperatures of as much as 175 degrees C. Its improved dielectric strength and Freon resistance make it suitable for hermetic motor applications. Enamel has inherent safety factor of about 40% against thermal overload. **General Electric Co., Schenectady 5, N. Y.**

Write No. 46 on Inquiry Card—Page 32

Liquid Chillers Come Fully Assembled



A completely new line of direct drive and semi-hermetic packaged chillers is now available. Sizes range from 75 through 125 HP indirect drive compressors, and 7½ through 60 HP in semi-hermetic compressors. All are designed for high-efficiency chilling of brines, glycol, oils, solvents, alcohol, water and other liquids. Units are adapted for operation with all types of air handling equipment, whether control station, individual room, multi-zone or remote type unit. **Curtis Mfg. Co., Refrigeration Div., 1905 Kienlen Ave., St. Louis 33, Mo.**

Write No. 47 on Inquiry Card—Page 32

3 ways to cut costs in grinding—



—all power-built by Black & Decker!

Whether you must take the work to the tool or bring the tool to the work, Black & Decker gives you a choice of grinders to save time and money.



Powerful B&D Bench Grinders save steps—speed up jobs when strategically located about your shop. Smooth running B&D motors give more constant speed, regardless of load. Four models: 6" to 10" sizes.



Precise light-weight B&D Die Grinders deliver top quality work at high speeds whether shaping, burring or grinding. Handle as easily as a pencil. Vibrationless—perfectly balanced from one end to the other. Smooth operation—perfect for carbide bit use. In sizes #8, #12, #20.



Time saving B&D Portable Grinders go to the work where surfaces must be prepared for welding and finishing. Perfect for smoothing welds, snagging and grinding castings and countless other grinding, cleaning and buffing jobs. 2½", 5" and 6" sizes available.



Leading Distributors
Everywhere Sell



Black & Decker®

QUALITY ELECTRIC TOOLS

MAIL TODAY FOR FREE DEMONSTRATION

THE BLACK & DECKER MFG. CO., Dept. 1703
Towson 4, Md. (In Canada: Brockville, Ont.)

☐ Please arrange a demonstration of a B&D Grinder.

☐ Please send additional information on _____

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____



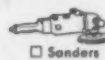
☐ Drills



☐ Scruggs®



☐ Magnetic
Drill Presses



☐ Sanders

"KEX" beats all.... meets all wiping needs with the right towel for every job!



The report on "KEX" INDUSTRIAL TOWEL RENTAL SERVICE from Columbia Steel & Shafting Company of Carnegie, Pennsylvania, says: "We've had 'KEX' since 1952... it's proven useful and beneficial! The uniformity of the towel, its superior wiping qualities, plus the regulated pick up and delivery is advantageous to production and extremely satisfactory to us."

- The "KEX" Service is engineered to suit your needs—provides the right size, right type towel for each individual job need.
- Saves countless man-hours of labor—through proper installation and systematic servicing.
- Regular pickup and delivery increases efficiency—no time-consuming disposal problems, reduced fire hazard for extra safety.
- "KEX" towels absorb up to 6 times their own weight—are uniformly bound with no loose ends to catch in machinery, are germ-free and strong enough to withstand hardest use.



Investigate the benefits of "KEX". "KEX" is a national service available through locally owned independent franchised dealers like Penn Overall Supply Company which services Columbia Steel & Shafting.



See "Wiping Cloths" or write to "KEX" National Service, 295 Fifth Avenue, New York 16, N. Y.

"KEX" NATIONAL SERVICE

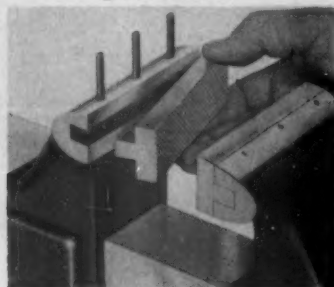
REG. U.S. PAT. OFF.



It isn't "KEX" unless it's imprinted with the "KEX" name
For More Information Write No. 222 on Inquiry Card—Page 32

Products

Vises with Replaceable Jaw Faces



A new line of machinists' vises features replaceable hardened tool steel "T" jaw faces. Faces are securely anchored in unbreakable malleable iron jaws. They are easily replaced but cannot come loose. Entire jaw face area is covered by a solid gripping surface, and there are no screw holes or screw heads in gripping face. **Columbian Vise & Mfg. Co., 9023 Bessemer Ave., Cleveland 4, Ohio.**

Write No. 48 on Inquiry Card—Page 32

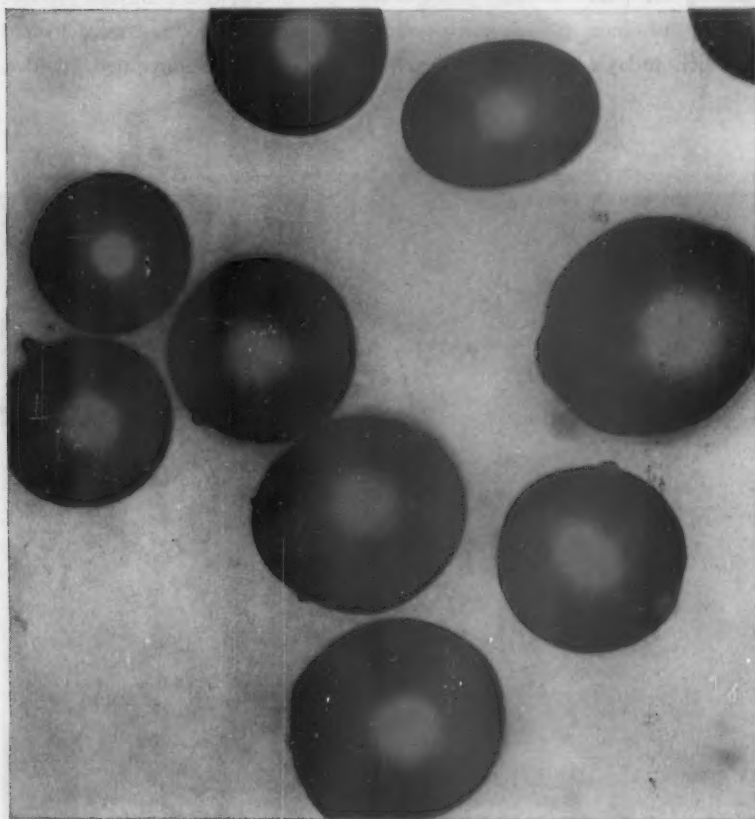
High Temperature Ceramic Insulating Brick



A new high-temperature ceramic insulating brick is made of material similar to that used for radiant tubes, furnace pans and thermocouple protection tubes. Manufacturing process creates cellular structure in which cells are interconnected so that brick's absorbent property permits gas to pass through for purging or evacuation. Material has density of 1600 degrees F firebrick, and value comparable to 2300 degrees F firebrick, yet it can be operated up to 3400 degrees F. **Ipsen Industries, Inc., 715 S. Main St., Rockford, Ill.**

Write No. 49 on Inquiry Card—Page 32

30 MILLION OF THESE JET-FORMED SPHERES IN EVERY INCH OF BEARING SURFACE!



JET PROCESS BLASTS MOLTEN ALLOY INTO UNIFORM PARTICLES . . . so small that thirty million will form a thin layer only one inch square! This sintered layer is the bearing surface of Federal-Mogul sleeve bearings.

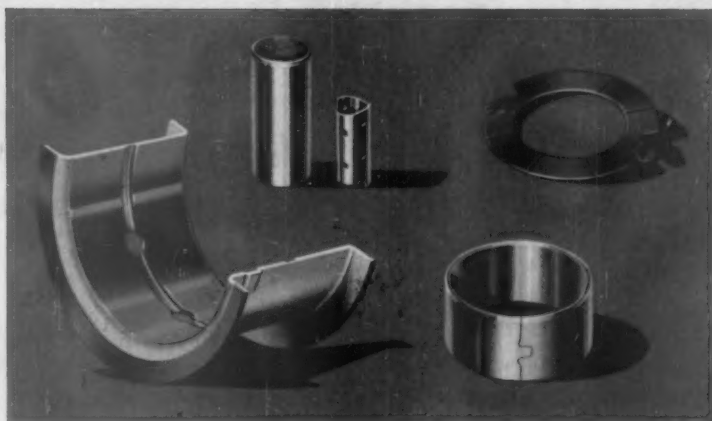
Molten copper-lead, alloyed to exact specifications, is poured into a special inert-atmosphere reaction crucible. Here it's blasted by a high-speed fluid jet to form the dense powder shown at left.

Because of the uniform particle size of this powder, the bearing surface of each F-M copper-lead sleeve bearing has precisely the same alloy composition and high adhesion to the steel backing as every other F-M bearing of the same alloy type!

YOU CAN SEE THE CONSISTENT SIZE in the photomicrograph. What you *can't* see is the consistent alloy composition which produces uniform bearing properties and performance in any alloy type.

Federal-Mogul makes engine bearings for every condition of speed and load. You can select from among five different sintered copper-lead alloys, all permanently bonded to precision-formed steel backing. Our Engineering Department is available to you for consultation or recommendations on bearing design and application. For more information, write Federal-

Mogul Division, 11077 Shoemaker, Detroit 12, Michigan.



A COMPLETE LINE! Steel backed bearings with a selection of many different alloys for virtually any bearing application—Plain and bimetal bushings in bronze, steel or aluminum. Precision thrust washers in solid bronze, or sintered alloys on steel (one or both faces). Rolled split spacer tubes in steel, aluminum or stainless.

FEDERAL-MOGUL

sleeve bearings
bushings—spacers
thrust washers

DIVISION OF
FEDERAL-MOGUL-BOWER
BEARINGS, INC.

Laboratory facilities at Standard have kept well in step with the revolutionary advances which have been made in the field of metallurgy during the past decade. Plant facilities, too, are geared to produce even the most exotic of special alloys which today's industry demands.

And Standard's famed personalized service means that your most difficult problems can be resolved by our metallurgists and engineers and assures a finished product which meets your most exacting requirements, delivered in record time. Write today for the illustrated booklet, "Quality Control at Standard."



Standard Steel Works Division

BALDWIN · LIMA · HAMILTON

BURNHAM, PENNSYLVANIA

Rings • Shafts • Car wheels • Gear blanks • Flanges • Special shapes



America's modern way of doing business.



LeTourneau-Westinghouse gives heavy-equipment customers swift, direct-from-factory service via AIR EXPRESS.

Air Express gets road scraper back to work fast!

*This giant dirt-moving scraper stands idle. A replacement contactor switch was needed. The local distributor found the item temporarily out of stock. But one phone call and AIR EXPRESS, the nation's most complete air-ground shipping service, sped a replacement direct from manufacturer to construction site. Once again, dependable, convenient AIR EXPRESS saves a modern business time and trouble. Small wonder that so many of today's sales-minded concerns use this low-cost service even for day-to-day shipments. Why don't you let AIR EXPRESS—jet-age wings of modern marketing—get your firm's products **FIRST TO MARKET . . . FIRST TO SELL!***

**AIR EXPRESS**



CALL AIR EXPRESS DIVISION OF RAILWAY EXPRESS AGENCY • GETS THERE FIRST VIA U. S. SCHEDULED AIRLINES

MARCH 14, 1960

For More Information Write No. 225 on Inquiry Card—Page 32

121

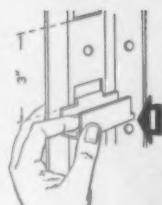
nobody can convince everybody

BUT

we're mighty happy that

BORROUGHS STEEL SHELVING

is first choice with so
many purchasing agents



Yes, preference is proof that Borroughs Steel Shelving is tops in efficiency, adjustability, quick assembly. Borroughs' exclusive shelf support brackets merely slip into post slots, enabling shelves to be arranged without tools, nuts or bolts. No special tools needed to assemble an entire unit. Any unit can be moved independently.

send for catalog

Represented in Sweet's Catalog,
Plant Engineering File 4G BO



BORROUGHS Shop Equipment

Rugged quality—solid value—throughout. Borroughs features work benches, tool stands, utility carts, shop desks and tables, portable and semi-portable work bench kits, a wide line of accessories.

BORROUGHS MANUFACTURING COMPANY OF KALAMAZOO

A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT

3014 NORTH BURDICK ST.



KALAMAZOO, MICHIGAN

Products

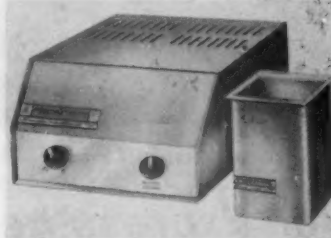
New Larger-Capacity Water Meter



A new magnetic drive sealed register water meter has a larger capacity. 1 in. model has capacity of 50 gals. per minute compared with capacities of 20 and 30 gpm respectively for $\frac{1}{2}$ and $\frac{3}{4}$ in. models. Hermetically sealed register ends problem of dirt, water and condensation that fog dials. Powerful magnetic drive eliminates the need for stuffing box, exposed intermediate train and driving dog. Proven oscillating piston principle gives long life and accurate measurement. **Rockwell Mfg. Co., Municipal & Utility Div., 400 N. Lexington Ave., Pittsburgh 8, Pa.**

Write No. 50 on Inquiry Card—Page 32

Low-Priced Ultrasonic Cleaner



A new ultrasonic cleaner is very low in price but high in power, capacity and performance. Full half-gallon capacity model will disintegrate more than fifty distinct classes of soil and contaminants in seconds. Ideal for smaller establishments, unit operates as simply as radio on 117 volt 50/60 cycle current. **Ultrasonic Industries, Inc., 141 Albertson Ave., Albertson, L. I., N.Y.**

Write No. 51 on Inquiry Card—Page 32

For More Information about ad on facing page Write No. 227 on Inquiry Card—pg. 32→

PURCHASING

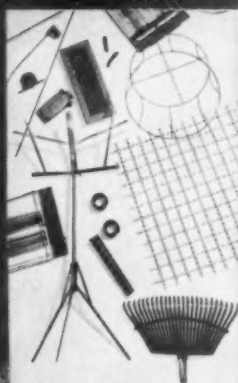
For More Information Write No. 226 on Inquiry Card—Page 32



Advantages for You

IT ALL COMES DOWN to one fact...that you can always count on Roebling high carbon flat spring steel to reduce preparation time, machine stoppages and rejects to a minimum. What's more, it's made as you want it... annealed, hard rolled untempered, scaleless tempered, tempered and polished, blued or strawed.

You pay for the best every time you buy flat spring steel. Make sure you *get* it. Specify Roebling. For details, write Roebling's, Wire and Cold Rolled Steel Products Division, Trenton 2, New Jersey.



A few of the thousands of high-quality items made from superior Roebling cold rolled steel.

ROEBLING



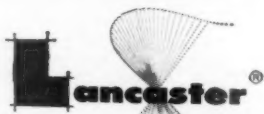
Branch Offices in Principal Cities
John A. Roebling's Sons Division • The Colorado Fuel and Iron Corporation

Roebling... Your Product is Better for it



**these
Lancaster
craftsmen
are molding**

parts from borosilicate glass, a hard, chemically stable, heat-resistant material. Lancaster designers use this remarkable glass for prisms; lenses; reflectors; and other heat-resisting components used in almost every industry • Borosilicate glass is characterized by a relatively low coefficient of expansion resulting in a high degree of resistance to thermal and mechanical shock • Lancaster also produces soda-lime, lead and colored glasses. What kind is best for your product? Call OLive 3-0311 for information or send blueprints for quotations. Lancaster Glass Corporation, Lancaster 4, Ohio.

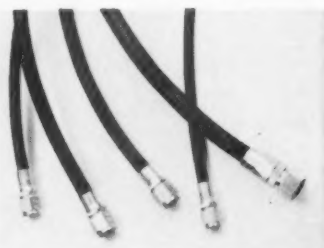


glass and plastics to brighten your product's future

For More Information Write No. 228 on Inquiry Card—Page 32

Products

High-Strength, Low-Weight Nylon Pressure Hose



Hose with a nylon inner tube reinforced with high tensile strength yarn is one-fifth the weight and has wall thickness less than half that of other hose with equivalent burst strength. Hose is designed for such applications as hydraulic, lubrication, fuel and oil, hot paint, solvent, freon and other lines. Featuring outstanding resistance to flex, pressure-pulse and vibrational fatigue, hose is non-toxic, non-corrosive and fungus-resistant. Two types are available, with recommended operating pressures of 1250 and 2000 psi (5000 and 8000 psi burst strengths). **The Polymer Corp., Reading, Pa.**

Write No. 52 on Inquiry Card—Page 32

New Flame-Retardant Laminates Available

Two new flame-retardant laminates are now available. Paper-base laminated plastic has excellent mechanical properties and provides an extra measure of fire safety on those applications where high tensile and flexural strengths are required. Maroon-colored material is offered in sheets approximately 49 x 49 in., in thicknesses from 1/32 to 1 in. inclusive. Second material being offered is copper-clad, hot-punch, paper-base phenolic laminate. It has excellent punching and electrical characteristics, including high insulation resistance and surface resistivity in the base stock. Available in sheets of 36 x 48 in., in thicknesses from .020 to 1/4 in. inclusive. **Taylor Fibre Co., Norristown, Pa.**

Write No. 53 on Inquiry Card—Page 32

PURCHASING

**ALEMITE
BARREL-TO-BEARING
LUBRICATION**

the
"moving
force"
of
production!

More and more, cost-conscious plant men are recognizing modern lubrication as an important "production tool." No longer do they see it as a simple maintenance problem.

With the years-ahead Alemite Barrel-to-Bearing Lubrication method, today's leading manufacturers are stepping up production . . . reducing downtime . . . extending machine life.

Included in a complete Alemite barrel-to-bearing lubrication method can be electric, air or hand-operated equipment. It will more than meet every need for high-pressure lubrication, filling hydraulic systems, servicing oil reservoirs, lubricating gear housings, and refilling grease guns.

Write for free Alemite catalog today!



Dept. Z-30, 1850 Diversey Parkway, Chicago 14, Ill.

ALEMITE
DIVISION
STEWART-WARNER
CORPORATION



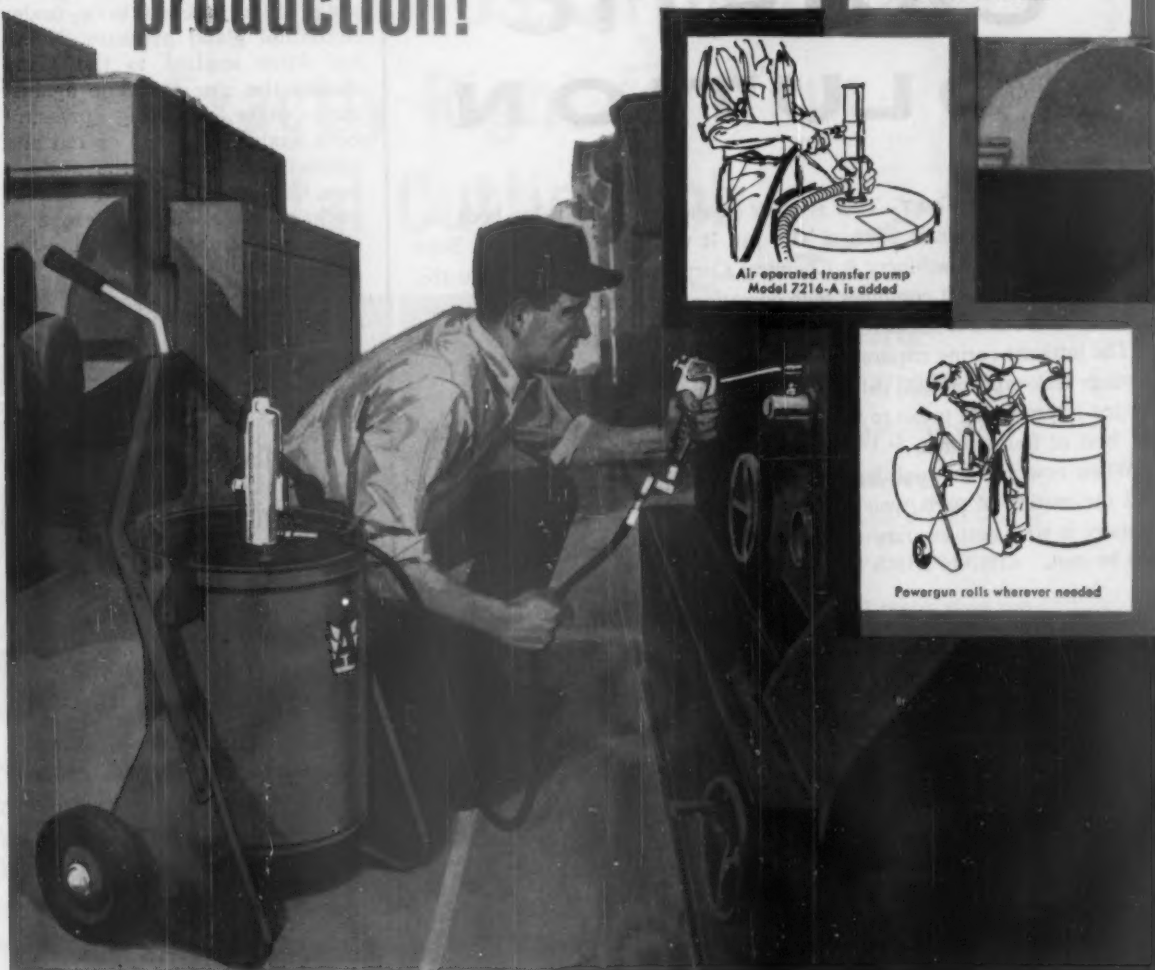
Cover protects 400 lb. drum



Air operated transfer pump
Model 7216-A is added



Powergun rolls wherever needed





CAUSTIC SOLUTION

A CASE IN POINT—This is a 19 pound Ni-Resist valve body designed to handle caustic fluids at 400 psi. It was cast for the John Bean Division of Food Machinery & Chemical Corp. Ni-Resist is ideal for this application because it combines high corrosion resistance with superior resistance to erosion from high velocity fluids.

The intricate coring required demands unusual skill to produce Ni-Resist castings leak-proof at 400 psi operating pressures. Hamilton Foundry succeeded in producing pressure tight castings, an accomplishment difficult for the best of foundrymen.

When new and unusual design problems arise in the selection of metal and the casting of parts, you will find that the skill and integrity of your foundry is your best insurance that specifications—and delivery schedules—will be met.

GRAY IRON • ALLOYED IRON • MEEHANITE® • DUCTILE (NODULAR) IRON • NI-RESIST • DUCTILE NI-RESIST • NI-HARD



HAMILTON FOUNDRY INC.

1551 LINCOLN AVENUE • HAMILTON, OHIO • TWInbrook 5-7491
For More Information Write No. 230 on Inquiry Card—Page 32

Products

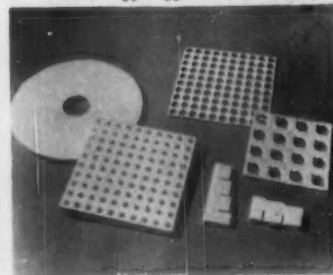
Low Gland Pressure Packing Ring Sets



New "Cup and Cone" and "Wedge" teflon packing ring sets make tight, secure seals under minimum gland pressure. Nominal force applied to the gland causes the rings to slide against each other, exerting pressure both against the stem or rod and against the bore of the stuffing box. Designed for valves, heat exchangers and a wide range of static and semi-static packing applications where rotation is not a factor. **Chemical & Power Products, Inc., 11 Broadway, New York 4, N. Y.**

Write No. 54 on Inquiry Card—Page 32

New Internal Cushion Packaging Material



A new type of internal cushion packaging material has many advantages for use with electronic parts, delicate instruments, etc. Plastic material is white in color, clear, lightweight and highly resilient. Material retains its physical characteristics from minus 85

(Please turn to page 128)

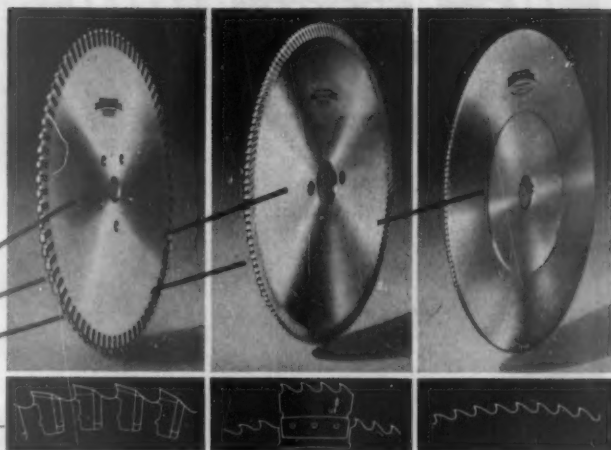
Do you cut ferrous metals? If so, Simonds has three basic saw designs for you:

INSERTED TOOTH METAL SAWS

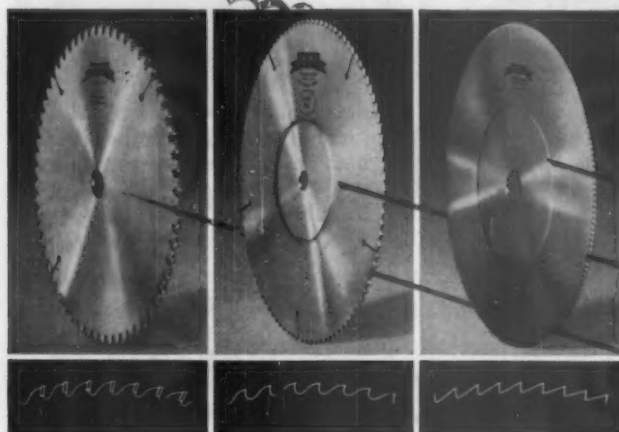
SEGMENTAL SAWS

SOLID TYPE SAWS

Available in High Speed and Semi-High Speed Steels



There's a SIMONDS Circular Saw Exactly Right for Your Metal Cutting Job



If you're cutting non-ferrous metals, Simonds offers you:

SOLID STEEL SAWS

Available in "Si-Maloy", in High-Speed Steel for cutting where extreme abrasiveness is present, and in Semi-High Speed Steel.

HIGH SPEED STEEL, HARD RIM SAWS

Hard cutting edge, soft center gives you long life coupled with safety.

CARBIDE TIPPED SAWS

for cutting aluminum and magnesium, as well as other non-ferrous metals

No matter what kind of metal you're working, there's a quality Simonds blade just right — a blade that means faster, cleaner cuts, longer blade life and maximum performance.

Find out how a Simonds Circular Metal Cutting Saw can mean important savings for you.



We Know YOUR NICKEL SILVER

Like The

Palm
Of Our
Hand

WRM ALLOY A-18
ASTM Spec. B122—Alloy 2
Nom. Comp. Cu 65%
—Ni 18%—Zn 17%



WRM ALLOY A-15
Nom. Comp. Cu 65%
—Ni 15%—Zn 20%



WRM ALLOY A-12
ASTM Spec. B-151—Alloy D
Nom. Comp. Cu 65%
—Ni 12%—Zn 23%



WRM ALLOY A-10
ASTM Spec. B122—Alloy 3
Nom. Comp. Cu 66%
—Ni 10%—Zn 24%



WRM ALLOY A-5
Nom. Comp. Cu 65% —Ni 5%—Zn Balance

WRM ALLOY B-18-S
ASTM Spec. B122—Alloy 4
Nom. Comp. Cu 55%
—Ni 18%—Zn 27%



WRM ALLOY B-12-S
ASTM Spec. B-122—Alloy 8
Nom. Comp. Cu 56.5%
—Ni 12%—Zn 31.5%



WRM ALLOY K-12
Nom. Comp. Cu 65%
—Ni 12%—Zn 21%—Pb 2%



WRM ALLOY K-8
Nom. Comp. Cu 65%
—Ni 8%—Zn 25%—Pb 2%

Over 50 years of concentrated, specialized experience assures you of a WRM Nickel Silver that will perform exactly as you want it to . . . under your tools and in your product. You'll get individual attention and prompt shipment, too.

For complete chemical and physical data on WRM Nickel Silvers, send for complete catalog.



WATERBURY ROLLING MILLS, INC.

Main Offices and Plant:
Waterbury, Connecticut
Tel. PLaza 4-0151

- In N.Y.C.—Murray Hill 7-1246
- In Phila.—ADams 3-1869
- In Chicago—SHeldrake 3-0100
- In Detroit—DUnkirk 6-3444
- In Cleveland—YEllowstone 2-6455

ALSO PHOSPHOR BRONZE &
OTHER COPPER ALLOYS

WR-27

For More Information Write No. 232 on Inquiry Card—Page 32

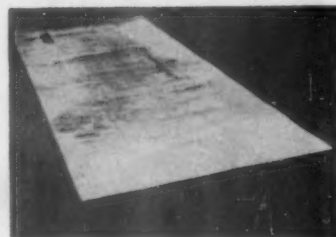
Products

(Continued from page 126)

degrees F to 175 degrees F, is dimensionally stable at normal temperatures, has a neutral pH, is non-dusting, non-abrasive and non-hygroscopic. Available in three grades, it can be die-cut to form a variety of cushioning or positioning shapes that previously had to be molded. **Armstrong Cork Co., Lancaster, Pa.**

Write No. 55 on Inquiry Card—Page 32

Strong, Light Gage Titanium Sheets

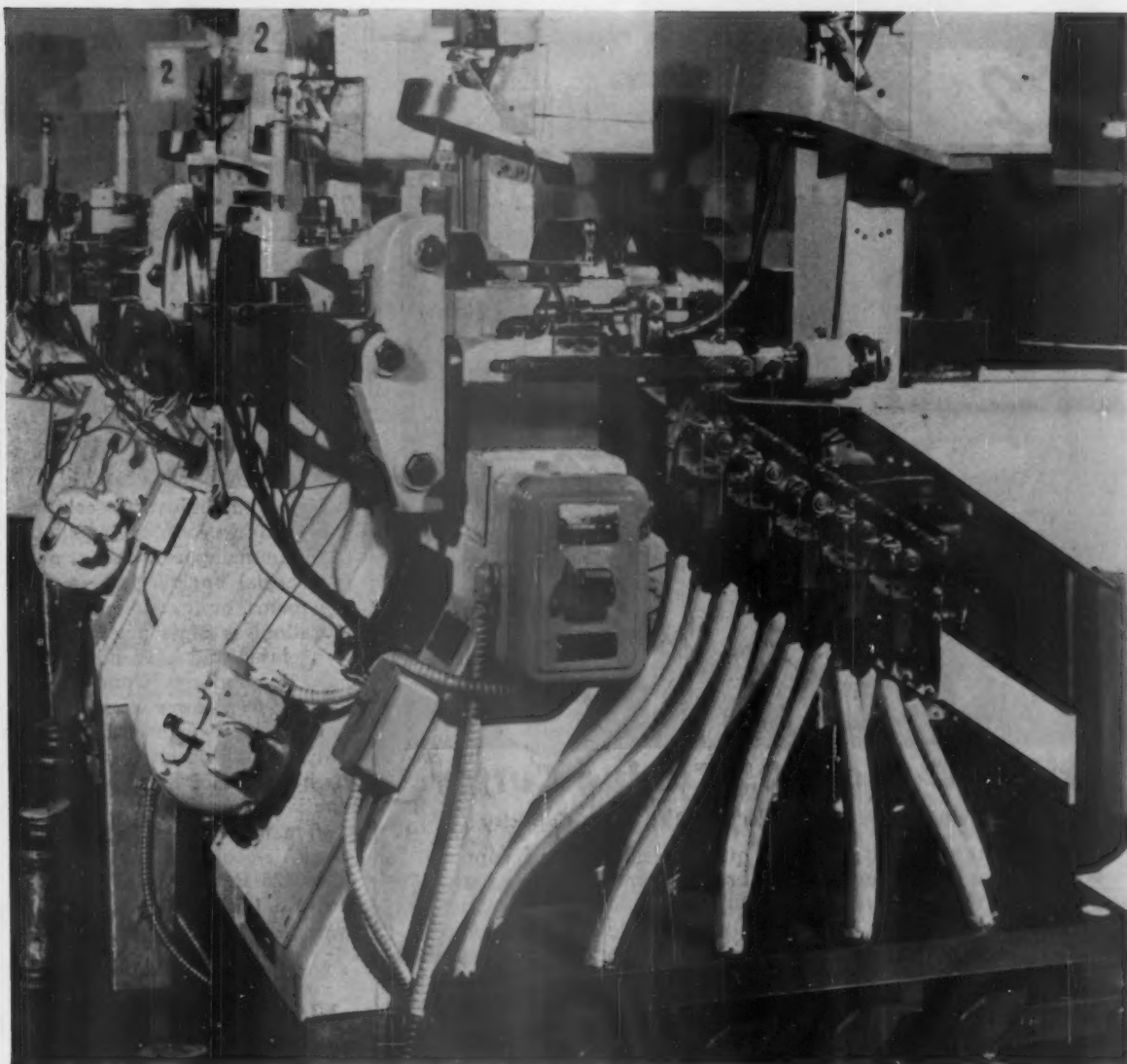


A new process of heat treating makes possible a titanium sheet which has the advantage of thinner gage and lighter weight while holding to required strength ratings. Heat treatable titanium alloy is supplied in sheet gages as light as 0.010 in. and in sheet sizes up to 48 x 120 in. Sheets with strengths in excess of 190,000 psi are being supplied on commercial basis. New process produces sheet free of surface contamination and with better flatness and more uniform properties. **Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio.**

Write No. 56 on Inquiry Card—Page 32



"The supplier snaps the invoice back to Purchasing, he hands it off to Accounting. . ."



What a P.A. doesn't have to know about bearings

You don't have to know how to match rollers—with precision up to 125 millionths of an inch—when you buy Timken® tapered roller bearings. We do it for you with these automatic sorters. Rigid quality control like this—from steel through finished bearings—makes Timken your No. 1

bearing value. When you buy bearings, specify "Timken" instead of just a part number, and be sure of getting the best. The Timken Roller Bearing Company, Canton 6, Ohio. Cable: "TIMROSCO". *Makers of Tapered Roller Bearings, Fine Alloy Steel and Removable Rock Bits.*



BETTER-NESS rolls on

TIMKEN®

tapered roller bearings

**2
New**

RIGID Tubing Cutters

Give you Grooved Rollers for close flare cut-offs... no waste! Also, Enclosed Feed Mechanism • Spare Cutter Wheel in Handle •



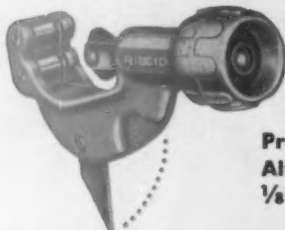
RIDGID No. 205 Tubing Cutter

Time-Saving, Slide-to-Size $\frac{1}{8}$ " to $2\frac{3}{4}$ " O.D. Capacity

Made of lightweight, high-strength cast aluminum alloy, you'll find these new RIDGID Tubing Cutters extra handy. Slight push on handle of large-size-range RIDGID No. 205 snugs cutter wheel against tubing... locks it in position until released. Feed screw fully protected and enclosed... always feeds into tube with easy handle turn... can't jam with chips or dirt. Wheel gives

quick, clean cuts of copper, brass, aluminum tubing and thin-wall conduit... no burr. Grooved rollers give easy flare cut-offs without tubing waste. Tubing always turns freely on 2 of 4 Rollers. Rollers smooth tubing ready for soldering. Fold-in reamer always handy. Spare cutter wheel in handle. Wheel for plastic and aluminum pipe available for No. 205 only.

Conform to Fed. Spec. GGG-C-771b Type II—Class I—enclosed feed mechanism



RIDGID No. 105 Tubing Cutter

Protected Feed Screw
Always Easy-Turning
 $\frac{1}{8}$ " to $1\frac{1}{8}$ " O.D. Capacity

To save time and tubing, order these new RIDGID Tubing Cutters today!
Your Supply House has them!

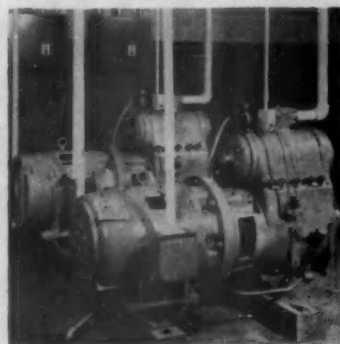
RIDGID

The Ridge Tool Company, Elyria, Ohio, U.S.A.

For More Information Write No. 234 on Inquiry Card—Page 32

Products

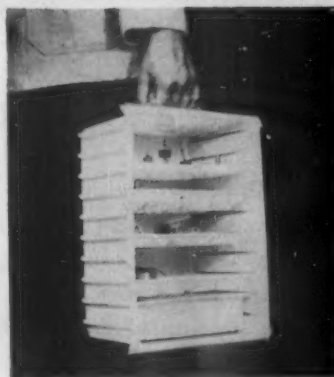
Compact, Easily Installed Enclosed Compressors



Improved industrial compressors feature ease of installation in minimum space, without needing special engineering, machinery rooms, or foundations. Quiet, vibrationless units are completely enclosed and have no exposed bolts or couplings. Containing as much as 50% fewer working parts they are lightweight and compact. Only a small outlet is needed for discharge air of 180 degrees, substantially lower in temperatures than many reciprocating compressors. Air-cooled or water cooled, 20 to 125 HP. Davey Compressor Co., Kent, Ohio.

Write No. 57 on Inquiry Card—Page 32

Carrying Case for Electronic Components



A new type carrying case for the protection of delicate electronic components also doubles as a storage cabinet. Case is made of Grex high density polyethylene which is non-breakable, resistant to corrosive chemicals and unaffected by wide range of temperature. (Please turn to page 134)

PURCHASING

ALABAMA—Birmingham • Mobile
 Montgomery
ALASKA—Anchorage
ARIZONA—Phoenix • Tucson
ARKANSAS—Little Rock
CALIFORNIA—Humboldt County
 Fresno • Imperial County
 Long Beach • Los Angeles
 Oakland • Sacramento
 San Diego • San Francisco
 Shasta • San Pedro
COLORADO—Denver
CONNECTICUT—Bridgeport
 Hartford
D. C., WASHINGTON
DELAWARE—Wilmington
FLORIDA—Jacksonville
 Miami • Orlando • Tampa
 Ft. Lauderdale • W. Palm Beach
GEORGIA—Atlanta • Augusta
 Savannah
ILLINOIS—Chicago • LaSalle
 Oak Park • Peoria
 Decatur • Rockford • Dixon
 Freeport • Quincy
INDIANA—Indianapolis
 Evansville • South Bend
IOWA—Des Moines • Mason City
 Clinton • Cedar Rapids
KANSAS—Wichita
KENTUCKY—Louisville
 Owensboro
LOUISIANA—Baton Rouge
 New Orleans • Shreveport
MAINE—Portland • Lewiston
MARYLAND—Baltimore
MASSACHUSETTS—Boston
 Springfield • Worcester
MICHIGAN—Detroit • Flint
 Grand Rapids • Jackson
 Kalamazoo • Lansing • Muskegon
 Saginaw
MINNESOTA—Duluth
MISSISSIPPI—Jackson
 Brookhaven
MISSOURI—Kansas City
 St. Louis • Hannibal • Springfield
NEBRASKA—Omaha
NEVADA—Reno
NEW JERSEY—Camden
 Newark • Ridgewood
 Hackensack • Paterson
NEW YORK—Binghamton
 Bronx • Brooklyn • Buffalo
 Elmira • Manhattan • Queens
 Rochester • Utica • Albany
 Syracuse • Watertown
NORTH CAROLINA—Greensboro
 Raleigh • Charlotte
NORTH DAKOTA—Williston
OHIO—Cincinnati • Cleveland
 Columbus • Dayton • Findlay
 Sandusky • Steubenville
 Toledo • Zanesville • Defiance
OKLAHOMA—Oklahoma City
OREGON—Portland
PENNSYLVANIA—Allentown
 Delaware County • Erie
 Harrisburg • Lancaster
 Norristown • Philadelphia
 Pittsburgh • Reading
RHODE ISLAND—Providence
SOUTH CAROLINA—Charleston
TENNESSEE—Chattanooga
 Nashville • Memphis • Kingsport
 Johnson City • Bristol
TEXAS—Abilene • Corpus Christi
 Dallas • Fort Worth • Houston
 Odessa • San Antonio • Lubbock
 Longview • Texarkana
UTAH—Salt Lake City
VIRGINIA—Norfolk • Richmond
 Roanoke
WASHINGTON—Spokane
 Seattle • Tacoma • Yakima
WEST VIRGINIA—Charleston
 Wheeling
WISCONSIN—Beloit • Green Bay
 Milwaukee
CANADA
SASKATCHEWAN—Regina
ONTARIO—Toronto • Kingston
 London • Niagara Falls • Ottawa
 Hull • St. Catharines • Leaside
BRITISH COLUMBIA—Vancouver



225 Aeroquip Distributors Listed in Yellow Page Directories

MAKE AEROQUIP PRODUCTS QUICKLY AVAILABLE EVERYWHERE

It pays to standardize on Aeroquip Flexible Hose, Reusable Fittings and Self-Sealing Couplings because these high quality products are available practically everywhere.

160 Yellow Page Directories throughout the United States and Canada now list the names of authorized Aeroquip industrial distributors. Any of these organizations are well qualified to help you with fluid line problems. They can supply on-the-spot replacements to get equipment back on the job with minimum downtime.

Aeroquip's complete network of distributors is backed by five manufacturing plants and four warehouses to assure immediate availability of hose, fittings, Self-Sealing Couplings and related products to keep your equipment "on the job."

Get to know your nearby Aeroquip Distributor. You'll find him listed in the Yellow Pages.



Reusable Fittings



Flexible Hose



Self-Sealing Couplings

Aeroquip
REG. TRADEMARK

AEROQUIP CORPORATION, JACKSON, MICHIGAN

INDUSTRIAL DIVISION, VAN WERT, OHIO • WESTERN DIVISION, BURBANK, CALIFORNIA
 AEROQUIP (CANADA) LTD., TORONTO 19, ONTARIO

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD





*His customer needed cable fast—
to cover a breakdown. It took a weekend
of teamwork to handle the*

Emergency at 5:05!

Friday, 5:05 P.M. The call caught me just as I was leaving the office. One of my customers* in Seattle was in trouble.

I'm Tony Mitrovich—District Sales Manager for Rome Cable in Seattle.

A big piece of equipment had broken down and my customer needed 500 feet of 5-KV cable *fast!* I wasted no time getting Long Distance. The answer lay some 2500 miles away—in Rome, N. Y.

Friday, 8:15 P.M. Rome time. I had the Sales Service Manager at Rome on the line. I caught him at home. As I got the story later, my request triggered a chain reaction of events. Here's how they went.

Friday, 8:30 P.M. The Sales Service Manager at Rome tried to contact the Head of the Shipping Department. No luck. He tried the Traffic Manager at home. He was out bowling in the Friday night league. Only one thing to do . . .

Friday, 9:30 P.M. He located his man at the bowling center; both went back to the plant that same night, located the right cable in stock and got it out.

Friday, 11:00 P.M. Order completed!

Saturday morning, 7:30 A.M. 500 feet of cable was taken to the airport, where it was shipped by air to Seattle.

Monday morning, 7:30 A.M. in Seattle. The necessary cable was on the job.

That's teamwork. That's the kind of support that makes my job a pleasure—and makes lots of friends for me.

And that's the kind of service that helps lots of my customers out of jams—makes them loyal Rome Cable customers.

**Name furnished on request*



This story typifies the service you can rely on from your Rome Cable salesman. He links you directly and quickly with the facilities and engineering skills at Rome—not only during emergencies but also during any special demands of your job. When you have a wire and cable problem of any kind, give him a call.

**ROME CABLE
DIVISION OF ALCOA**

PAGE

CHAIN LINK

FENCE

Fence value depends on
—quality materials
—quality installation
You get both from PAGE

New Aluminized Fabric!

(other quality fabrics available:
galvanized steel,
aluminum,
stainless steel)

**8 basic fence designs
6 gate styles**

**Expert installation
by specialists**

**Registered Certificate
of Quality furnished
to property owner**

Good fences—since 1883

Write for
helpful booklet



PAGE FENCE ASSOCIATION
National Headquarters • Monessen, Pa.

A product of Page Steel & Wire Division
American Chain & Cable Company, Inc.

For More Information Write No. 237
on Inquiry Card—Page 32

Products

(Continued from page 130)

peratures. Case has a carrying handle and transparent front that slides up and down for easy access to drawer or trays, which are designed to accommodate wide variety of parts. Protects from dust, shock, moisture and corrosion. **Highland Products, Richards Ave., Dover, N.J.**

Write No. 58 on Inquiry Card—Page 32

Flexible, Low-Cost Radial Drill Press



A low-cost radial drill press stresses capacity and flexibility. Press will drill to the center or any point of 32 in. square and is ideal for rapid multiple drilling operations, horizontal and angular drilling. Capable of accurate sanding, shaping, routing, mortising, etc., unit features a head that swivels 360 degrees around the column and tilts more than 90 degrees to right and left. Choice of 4 speeds, 700, 1250, 2400 and 4700 rpm, and $\frac{3}{4}$ x $23\frac{3}{4}$ x $15\frac{1}{2}$ in. table. **Rockwell Mfg. Co., Delta Power Tool Div., 465 N. Lexington Ave., Pittsburgh 8, Pa.**

Write No. 59 on Inquiry Card—Page 32

Massive Nylon Symmetrical Shapes

Production of massive nylon symmetrical shapes is expected to expand the use of nylon in metalworking and manufacturing fields. Sections are being produced weighing up to 400 lbs. and measuring 36 in. in width, 2-5/8

(Please turn to page 136)

For wiring in confined space KLEIN midget pliers



Hardly larger than a package of your favorite cigarettes, these new Klein Midget Pliers will simplify many of those small jobs where space is confined.

✓ Midgets in size but giants in performance, they solve major problems when wiring up electronic assemblies; making model trains, airplanes, automobiles, or in any extremely small or confined work.

These new midgets are additions to the famous Klein line of high-quality pliers that are backed by over a century of manufacturing experience. See your dealer.

No. 257-4 Oblique Cutting Plier	Size 4 in.
321-4 1/2 Long Nose Plier	4 1/2 in.
322-4 1/2 (Without Knurl)	4 1/2 in.
224-4 1/2 End Cutting Plier	4 1/2 in.

Free Klein Plier Catalog



A complete catalog listing and describing more than 100 different styles and sizes of Klein Pliers will be sent on request. Write for yours today.

Foreign
Distributor:
International Standard
Electric Corp., New York



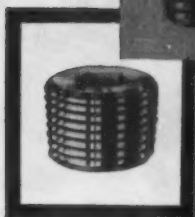
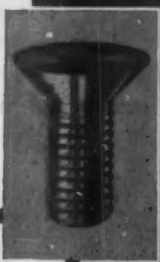
Mathias KLEIN & Sons
Established 1881
7200 McCormick Road • CHICAGO 45 ILLINOIS

For More Information Write No. 238
on Inquiry Card—Page 32

PURCHASING

INDUSTRIAL DISTRIBUTORS ARE PART OF THE H-K TEAM

*... and important members
of your team, too!*

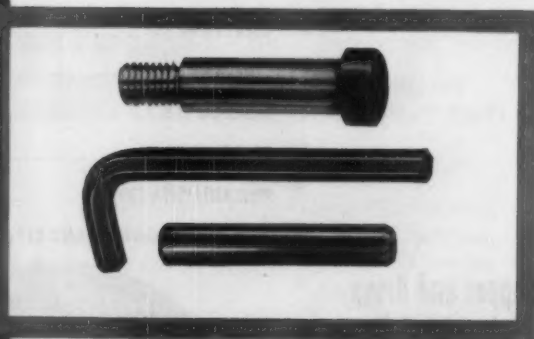


- Since the company was founded in 1929, Holo-Krome Forged Socket Screw Products have been sold only through authorized, stock-carrying industrial distributors. We believe this method of distribution is both economically sound and efficient. Distributors carry an adequate stock of H-K products right to the door of your plant; they provide on-the-spot engineering assistance; their knowledge of local problems means you get the products you want, when you want them, in the quantity you need.

- H-K's distributor team is as important as any department of our company. To back up our distributors, we are continuing to improve our product quality as well as our packaging, labeling, shipping, telegraph quoting service—and our unmatched SAME-DAY SERVICE on standard items.

- Know your Holo-Krome industrial distributor; call on him for assistance; rely on him for prompt service and technical help...

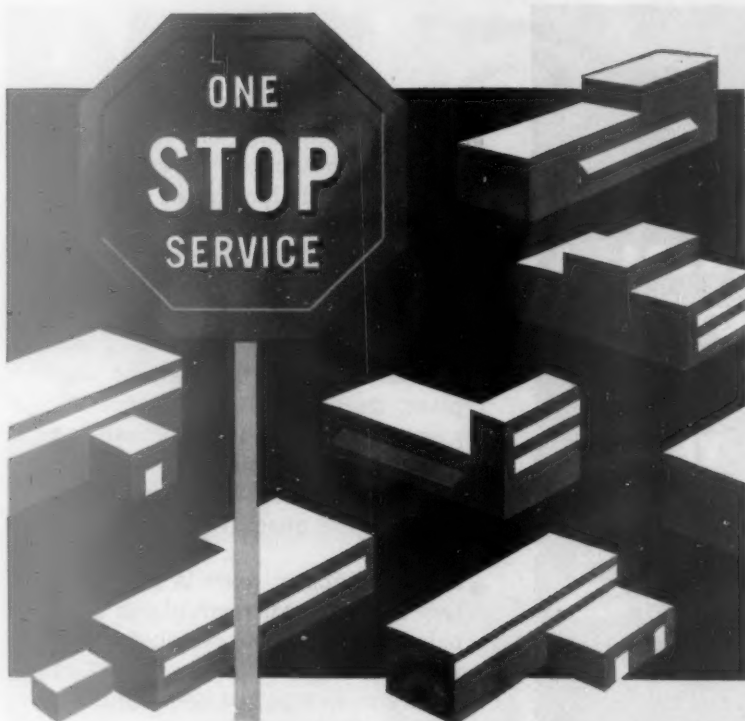
**HE'S A RESPECTED MEMBER
OF THE H-K TEAM!**



HOLO-KROME SOCKET SCREWS

THE HOLO-KROME SCREW CORPORATION • HARTFORD 10, CONN.

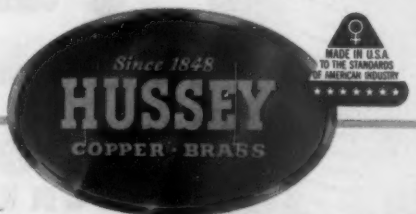
Sold only through Authorized Industrial Distributors



for Hussey-Quality Copper at **7** Convenient Warehouses

- PITTSBURGH (19).....2850 Second Ave.
- CLEVELAND (3).....5318 St. Clair Ave.
- CINCINNATI (37).....1045 Metn Drive
- CHICAGO (18).....3900 N. Elston Ave.
- ST. LOUIS (1).....Globe Democrat Bldg.
- PHILADELPHIA (30).....1632 Fairmount Ave.
- NEW YORK, LONG ISLAND CITY (6)...34-39 Thirty-first St.

Copper and Brass
sheet • strip • bars
rods • wire • nails
roofing products
bus bar • free cutting
rounds and shapes



C. G. HUSSEY & COMPANY

(Division of Copper Range Co.)

ROLLING MILLS AND GENERAL OFFICES

PITTSBURGH 19, PENNSYLVANIA

For More Information Write No. 240 on Inquiry Card—Page 32

Products

(Continued from page 134)

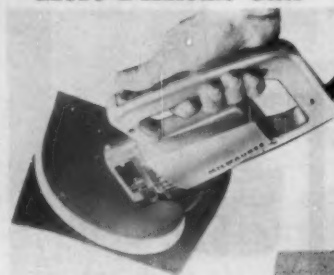
in. in thickness and 102 in. in length. New sizes open up applications such as tooling fixtures, wear plates, large rollers, etc. where non-ferrous metals or



stainless steel materials were previously used. Corrosion-resistance, resilience, mechanical surface characteristics and economy are cited as advantages. Polymer Corp., 2120 Fairmont Ave., Reading, Pa.

Write No. 60 on Inquiry Card—Page 32

Electric Shear for More Difficult Cuts



A new shear provides a more efficient means of making difficult cuts in sheet metal, such as templates. Heavy-duty electric shear cuts 16 gauge steel, 17 gauge stainless. Unique blade with cam-like cutting face greatly reduces blade interference, eliminating usual difficulty in making tight radius right curve cuts. Radii as small as ½ in. to the left and 1 in. to the left and 1 in. to the right can be accomplished with greater accuracy. Extra block length, high speed and rigid ram eliminate fouling. Milwaukee Electric Tool Corp., 5368 W. State St., Milwaukee, Wisc.

Write No. 61 on Inquiry Card—Page 32

A NEW IMPACTTOOL

...WITH EXTRAS THAT PAY OFF FOR SMART TOOL BUYERS!



6-Vane Air Motor

Compare a "six" with a "four"! I-R's 6-Vanes give you greater power, smoother operation, higher starting torque.



new

Size 808 Impacttool
1/8" drive



"2-Pack" Construction

Either the impact mechanism "pack" or the motor "pack" can be serviced individually without disturbing the other.

Rugged Steel Hammer Case

For a lifetime of service! This exclusive I-R feature protects hammer mechanism, but is lightweight for easy handling.

"Cuss-proof" Socket Retainer

Sockets can't fall off accidentally, but strong, spring-held retainer can be easily replaced. Another I-R exclusive.

Built-in Air Control

Air-balanced throttle valve provides full power range with smooth and complete control. Not just an "on and off" throttle.

Precision Quality

Special electronic equipment double-checks machined parts for perfect mating of all surfaces and bores.

**LOOK
FOR I-R EXTRAS
BEFORE YOU BUY!**



Ingersoll-Rand

Tools plus AirEngineering
increase output per man

Smart buyers and experienced tool men know these Ingersoll-Rand EXTRAS pay off . . . in terms of longer tool life, easier maintenance, and better nut running performance. With them you get 20% more power and 200% faster rundown in a precision tool so small (7½") and light (8¾ lbs.) you can use it anywhere.

For details on the all-new Size 808 Impacttool, call your I-R representative today. Or write: Ingersoll-Rand, 11 Broadway, New York 4, N. Y.

MARCH 14, 1960

For More Information Write No. 241 on Inquiry Card—Page 32

34A-8

137



replace with **RCA** **THYRATRONS**

in critical control low-power applications

It makes good profit sense to replace with the best...and the most dependable low-power thyratrons you can get come from your RCA Industrial Tube Distributor. RCA thyratrons have an unmatched record throughout industry for reliability and long life in the most demanding industrial control applications. You get top service for your tube dollar when you replace with RCA thyratrons.

Your local RCA Tube Distributor stocks the standard types of thyratrons for low-power applications—including the popular RCA-2050 and RCA-2D21. He's set up to give you immediate, off-the-shelf delivery. Call him for all your replacement tube needs.

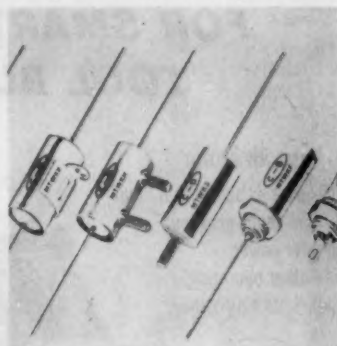


RADIO CORPORATION OF AMERICA
Electron Tube Division Harrison, N. J.

For More Information Write No. 242 on Inquiry Card—Page 32

Products

New Metallized Paper-Plastic Capacitor



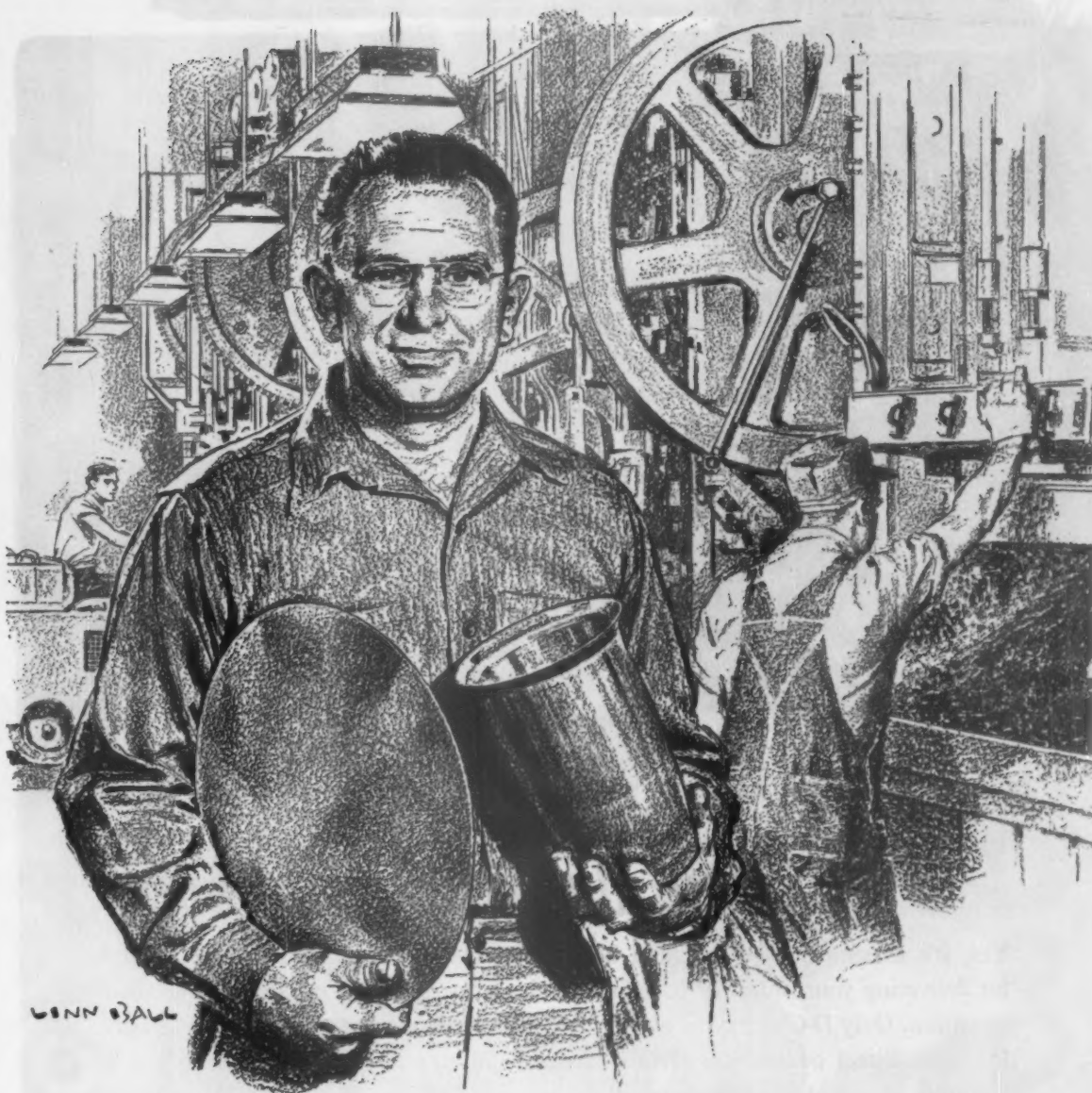
New, miniature metallized paper-plastic film capacitors are designed for high-grade electronic equipment for operation from minus 55 degrees C to plus 125 degrees C without voltage derating. Hermetically sealed in tubular metal cases with glass-to-metal end seals, units are available in 200, 400 and 600 volt DC sizes in various mounting styles for efficient chassis design. Features include higher insulation resistance characteristics, lower fault-count and more rapid self-healing. **Cornell-Dubilier Electric Corp.** 900 Hamilton Blvd., So. Plainfield, N.J.

Write No. 62 on Inquiry Card—Page 32

New Alkaline Derusting Products

Two new products provide an alkaline method for derusting and descaling of steel and activating it for plating. Process removes rust, scale, carbon smut, oxides and light soil from iron and steel alloys by electrolytic treatment in an alkaline solution at room temperature. Acid pickling is eliminated, and complete preparation of steel for plating in one simple step is made possible. Both products are completely prepared powdered materials which need only be dissolved in cold water and are economical to use. One is superior for scale removal, and the other is recommended when heavy rust is present. **Enthone, Inc.,** New Haven, Conn.

Write No. 63 on Inquiry Card—Page 32

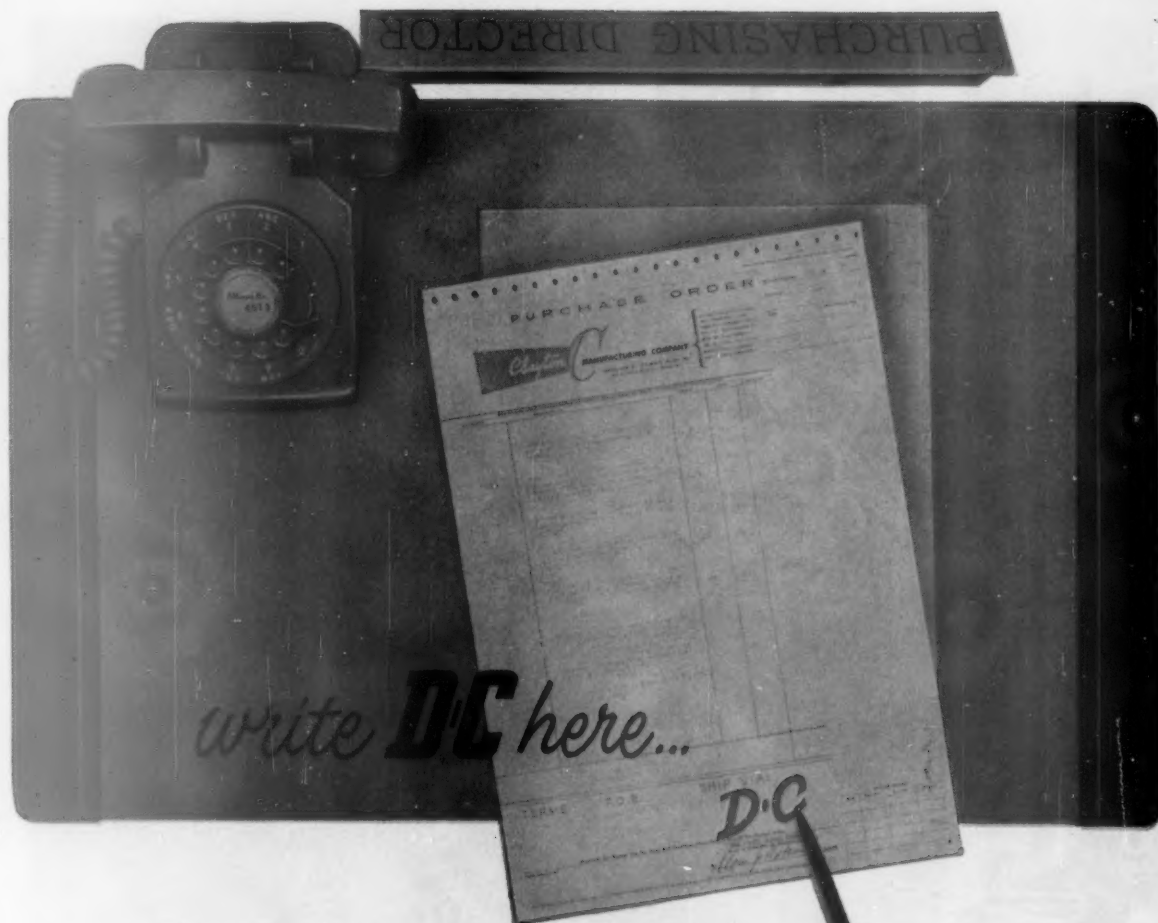


**"For extra deep drawing we like Sharon
Quality Stainless Steels"** — WALTER MARKOWSKI, Pressroom Foreman
S. W. FARBER, Inc.

"Here at Farber we really put stainless steel through severe tests," says Walter Markowski, pressroom foreman. Our product design calls for extra deep draws, delicate rolled edging and bright flawless finishes. Over the years we have found a most dependable source of prime stainless steels in the Sharon Steel Corporation, Sharon, Pa."



SHARON *Quality* **STEEL**



END *your delivery problems!*

Yes, it's as simple as that...and here's why. D-C takes the *entire responsibility* for delivering your order for parts, materials, or merchandise *on time* and *in good condition*. Only D-C can offer one-carrier responsibility coast-to-coast because *only* D-C goes direct coast-to-coast! One-carrier handling...one-carrier control...plus non-stop, straight-through service *all the way* on D-C equipment...ends needless trans-loading, cuts 20% off running time...assures on-time delivery *every time!* **Make D-C your partner in profitable purchasing. Always specify D-C... the Dependable Carrier!**



D-C

DENVER CHICAGO TRUCKING CO., INC.

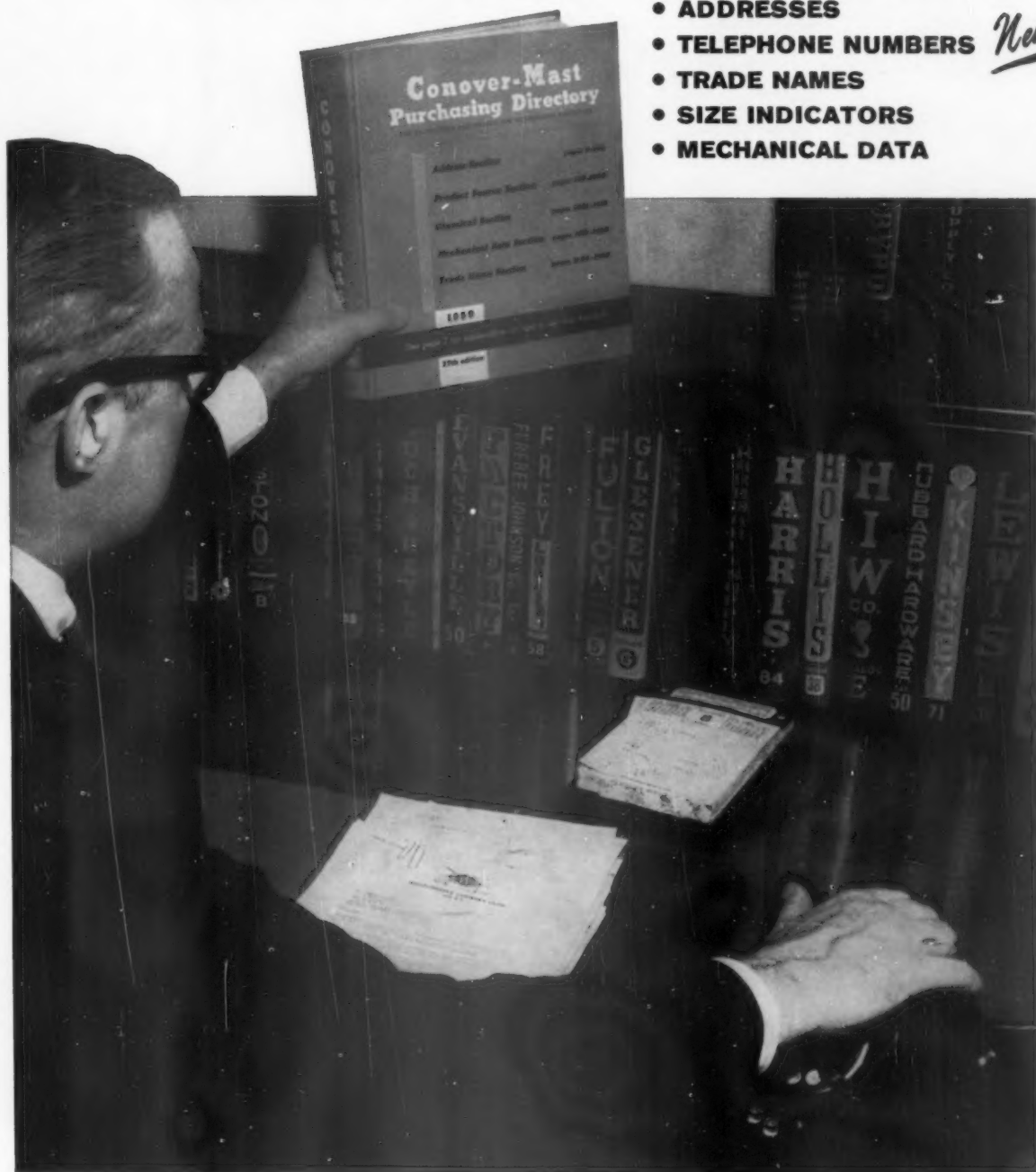
THE ONLY DIRECT COAST-TO-COAST CARRIER

For More Information Write No. 244 on Inquiry Card—Page 32

ONE handy directory for

- PRODUCT SOURCES
- ADDRESSES
- TELEPHONE NUMBERS
- TRADE NAMES
- SIZE INDICATORS
- MECHANICAL DATA

New



Conover-Mast Purchasing Directory can be kept right at your desk

Because C-MPD is designed for industrial buying it is compact...yet complete. And now you can use it for checking telephone numbers of companies that sell to industry. Never before has so much information been put into *one volume* for industrial Purchasing Agents.

MARCH 14, 1960

Conover-Mast Purchasing Directory

205 E. 42nd Street • New York 17, N. Y.

Murray Hill 9-3250

For More Information about ad on following
page Write No. 245 on Inquiry Card—pg. 32→



IF YOU'RE CONCERNED ABOUT
CHEMICAL PRODUCTION COSTS,
YOU'LL LIKE DOING BUSINESS WITH
COLUMBIA-SOUTHERN



A complete appraisal of your chemical purchasing practices might reveal areas where you can make significant savings . . . and your Columbia-Southern Representative is fully equipped to help you do such a job.

He'll help you determine whether you're set up for the most economical chemical storage and handling, for one thing. And he'll survey the various forms and grades of chemicals you are buying now. Very often a small change can result in big savings.

Another area you can explore together is delivery procedure. Are you using the best means of transportation to insure prompt delivery at the most reasonable costs?

Get in touch with your Columbia-Southern Representative, and review these questions with him. You'll be glad you did.

Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pa. Offices in fourteen principal cities. In Canada: Standard Chemical Limited.

columbia | southern chemicals

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
A Subsidiary of Pittsburgh Plate Glass Company

Chlorine • Caustic Soda • Caustic Potash • Soda Ash • Ammonia
Solvents • Sodium Bicarbonate • Chromium Chemicals
Barium Chemicals • Sulfur Chemicals • Agricultural Chemicals
Reinforcing Pigments • Calcium Chloride • Hydrogen Peroxide
Muriatic Acid • Calcium Hypochlorite • Titanium Tetrachloride



SEE a demonstration by a specialist

TROUBLE-FREE PAPER TOWEL CABINET



for FREE demonstration or literature address:

WEST CHEMICAL PRODUCTS INC., 42 24 West St., Long Island City 1, N. Y.
Branches in principal cities • IN CANADA: 5621-23 Casgrain Ave., Montreal



For More Information Write No. 246 on Inquiry Card—Page 32



NEW filter respirator actually comfortable to wear

More efficient —
costs less, too!

We don't say your workers won't know they're wearing our new Resp-R-Aid mask. But it's a fact the edges of this remarkable urethane foam mask are so soft and pliable they literally *caress* the natural contours of any face, closing all gaps with no discomfort. Yet the mask weighs hardly more than an ounce.

The entire mask is a filter. More than 25 square inches of micro-porous urethane. Up to 8 times the filtering area of most masks. Breathing is easy, natural, *comfortable* because thousands of interconnected cells trap foreign particles, but let air pass freely. Resp-R-Aid lasts longer, too;

you wash it out in seconds. And every Resp-R-Aid is factory-sanitized with bacteria-static quaternary agents.

Yet for all its comfort and efficient protection against mists, sprays and nuisance dusts, Resp-R-Aid costs only \$1.95. Replacement filters available. Watchmocket Optical Company, Inc., 232 West Exchange St., Providence 3, Rhode Island. Throughout Canada: Levitt-Safety Limited.

**WATCHMCKET
Resp-R-Aid®**

U.S. Patents Applied For

For More Information Write No. 247 on Inquiry Card—Page 32

Products

Thermoplastic Sheet for Insulating Molds



A new method of insulating electrical components makes use of epoxy resins and thermoplastic sheet. Process produces labor and material savings by utilizing vacuum-formed thermoplastic sheet as the mold form. Skin wrap is vacuum-formed around the component, and opening is made at top for lead wires to be brought out and resins poured in. Card-board or tape is used to position the leads. When the resin has been poured into the mold, the part is ready for wiring. Any number of articles of varying sizes and shapes can be skin-wrapped simultaneously, limited only by size of vacuum-forming machine. Minnesota Mining and Mfg. Co., St. Paul, Minn. or Campeco Div., Chicago Molded Products Corp., 2717 N. Normandy Ave., Chicago 35, Ill.

Write No. 64 on Inquiry Card—Page 32

Electric Staplers for Light Production



Two new electric staplers are designed for light production line packaging jobs. Each is particularly useful for such continuous stapling tasks as the packaging

(Please turn to page 146)

FASTENER COSTS

SLASHED 40% ...

ASSEMBLY COSTS CUT 17%

... when **THOMSON RIVETS**
replace 4 bolts and nuts in double-tubular
joints of Wallace's Fold 'n' Kot!

Wallace Products, Inc., Bellmawr, New Jersey, manufacturers of steel and aluminum products, is a long-time user of Thomson rivets for dependable fastening of portable cots and tables. Latest step in their product-improvement and cost-reduction programs was the rewarding switch from hand-applied bolts and nuts to machine-set rivets for the critical joint pictured above. The Thomson combination of tubular rivets and automatic rivet setting machines provided the superior fastening strength, assembly speed and automatic quality control inherent in riveting.

Seventy-five years' experience in solving fastening problems is the plus you get when J. L. Thomson Mfg. Co. becomes your source of rivets and machines. More than 8,000 rivet specifications and more than 200 machine models give you standard answers to special or routine fastening requirements.



Selection of the right rivet-and-machine combination is made easy by a get-together with your nearby Thomson Fastening Man. He's listed in the Yellow Pages. Another valuable source of information is Thomson's new handbook. The coupon at right, attached to your company's letterhead, will bring it to you.



Drastic cost reductions resulted when Wallace Products switched to Thomson rivets (S-1844, 34/16") set with Thomson automatic riveting machine (Style 148).



Judson L. THOMSON Mfg. Co.

WALTHAM 34, MASSACHUSETTS

Thomson (Canada) Rivet Co. Ltd.
Gananoque, Ontario

Judson L. Thomson Co., 321 Sawyer Rd., Waltham, Mass.

● Please rush your new handbook "Cost-Cutting Facts about Fastening with Rivets".

●

●

● Name _____ Title _____

●

● Company _____

●

● Address _____

●

● City _____ Zone _____ State _____

NEW YORK • ILLINOIS • INDIANA • OHIO • MICH. • PENN. • CALIF. • FLA. • TEXAS • MISSOURI • S. CAROLINA

MARCH 14, 1960

For More Information Write No. 248 on Inquiry Card—Page 32

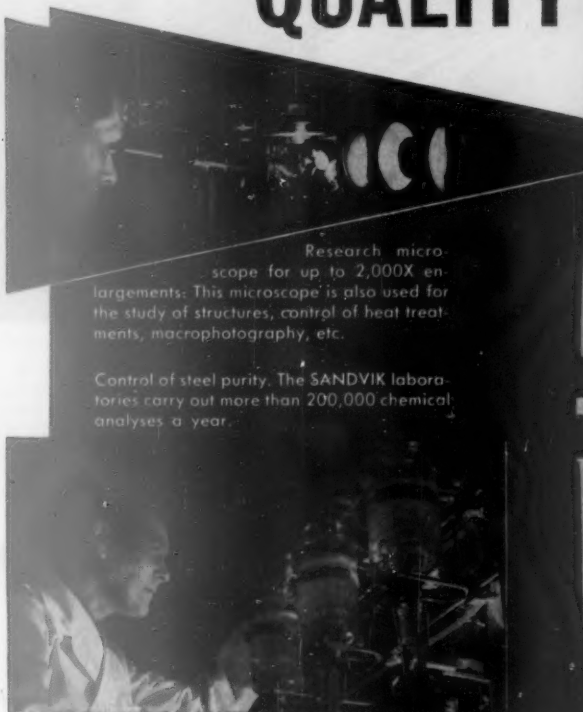
145

SANDVIK

Keeps A

Scientific Eye On

SPRING STEEL QUALITY



Research microscope for up to 2,000X enlargements. This microscope is also used for the study of structures, control of heat treatments, microphotography, etc.

Control of steel purity. The SANDVIK laboratories carry out more than 200,000 chemical analyses a year.

At Sandvik, the latest research and quality control techniques constantly improve and protect spring steel quality.

This is part of the reason why Sandvik steels have the special physical stamina for such critical applications as flapper valves, instrument springs, shock absorbers, surgical instruments, unbreakable watch mainsprings, piston ring segments and expanders, etc.

For information on Sandvik's wide variety of grades and sizes of specialty strip steel, send for free brochure.

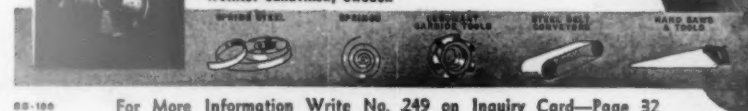
SANDVIK STEEL, INC.

1702 Navins Road, Fair Lawn, N. J.
Swarthmore 7-6200 • N.Y.C. ALgonquin 5-2200

Branch Offices:

Cleveland • Detroit • Chicago • Los Angeles
SANDVIK CANADIAN LTD., P.O. Drawer 1335, Ste.
O., Montreal 9, P. Q.

WORKS: Sandviken, Sweden



88-100

For More Information Write No. 249 on Inquiry Card—Page 32

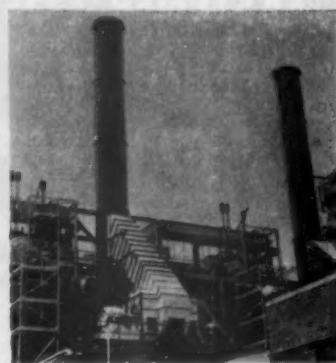
Products

(Continued from page 144)

of small items in paper, plastic or cloth bags. One model provides fully automatic electric stapling; the other is a semi-automatic, foot or knee-operated machine. Both handle items up to 1/8 in. thick with no adjustment required. Easy to carry, staplers plug into any 115 volt AC outlet. Other voltages on special order. Bostitch Inc., 2012 Briggs Drive, East Greenwich, R.I.

Write No. 65 on Inquiry Card—Page 32

Glass-Protected Smokestacks



A steel smokestack protected by an acid-resistant glass coat inside and out has a life span three to five times the normal. Glass coating is available in a variety of colors and eliminates need to repaint corroded and rusting smokestacks. New process will withstand extreme temperature and adverse weather conditions. O. A. Smith Corp., Process Equipment Division, Milwaukee 16, Wisc.

Write No. 66 on Inquiry Card—Page 32

PURCHASING



"You just bought our first one, let us know how it works..."

PURCHASING

Pontiac

Oldsmobile

Chevrolet Corvette

Buick

Cadillac

ALWAYS SEEN IN THE BEST CIRCLES

BROWN-LIPE-CHAPIN • STAMPING • ELECTROPLATING • POLISHING • PAINTING

WHEEL DISCS by Brown-Lipe-Chapin round out the beauty of today's outstanding automobiles. And your product can also benefit from this lasting sales appeal with the facilities of B-L-C. Whether it is eye-catching appeal, lustrous rugged protection or a light metal border to brighten your sales appeal, we offer you our services backed by years of experience and research. Formed metal parts . . . pressed, rolled, stretch bent or die-cast, can be polished, chrome plated, anodized or painted for you in either of our plants at Elyria, Ohio, or Syracuse, New York. Let our engineers help you right at the design stage to combine beauty and economy in brightening your product. They'll follow your job every step of the way. For prompt attention, call or write Brown-Lipe-Chapin, Syracuse, New York.



RELIABILITY by BROWN-LIPE-CHAPIN

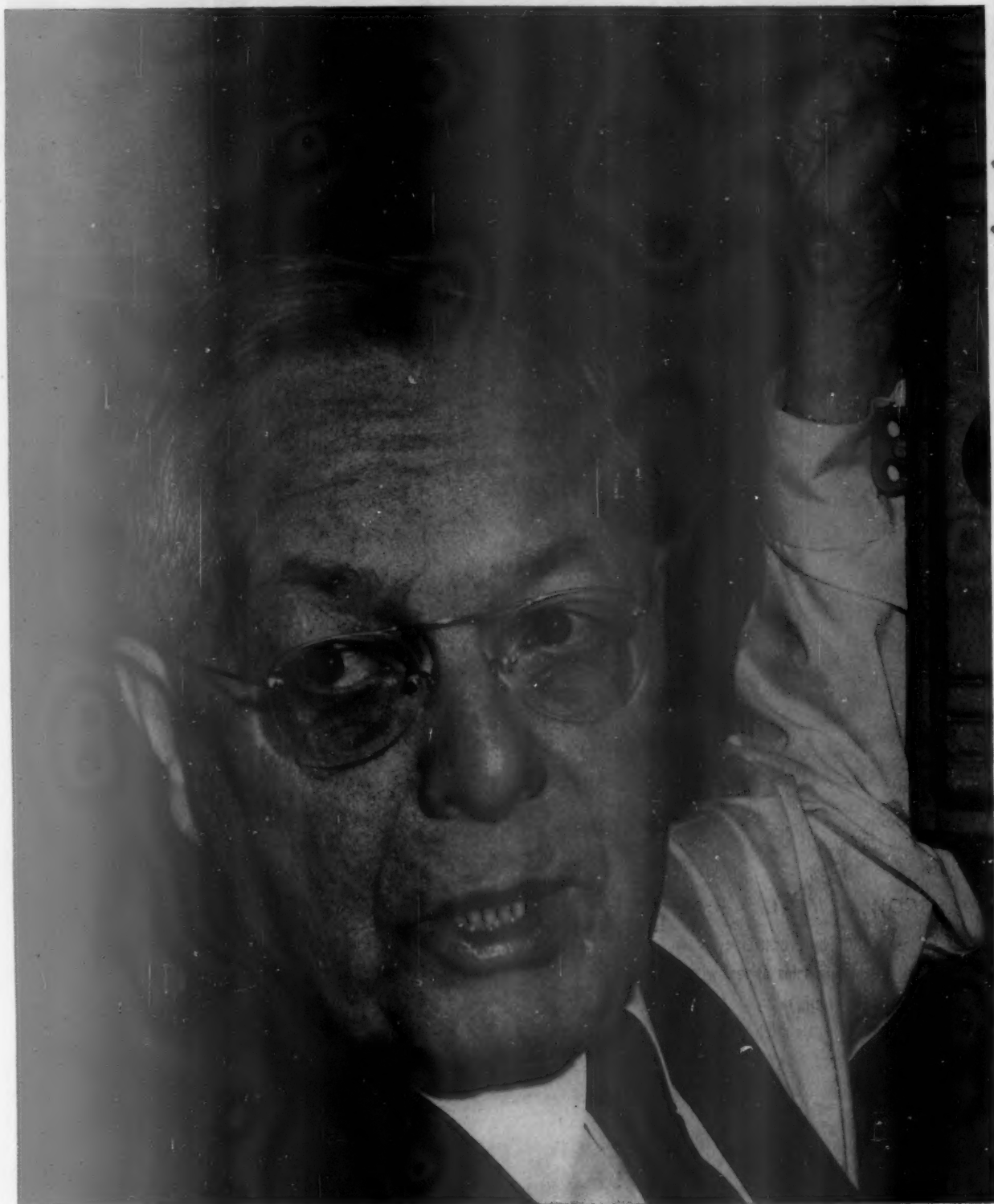
D I V I S I O N O F G E N E R A L M O T O R S C O R P O R A T I O N

MARCH 14, 1960

For More Information Write No. 250 on Inquiry Card—Page 32

147

"Nobody was going to pin an



'old-fashioned' label on me"



"Funny how easy it is to get behind the times. Like I was before I learned about circuit breakers. But nobody can say I'm not up-to-date now.

"All of a sudden, I began noticing the modern, enclosed circuit breakers in use by other plants . . . for machines, lights and production area outlets. Really up-to-date plants use them for practically everything. And engineers tell me they won't take anything else.

"Well, I decided to find out why. And today I use circuit breakers exclusively. What a difference. If we have an overload, we get power back in minutes . . . without idling people and losing production. And my job is easier and a lot safer.

"Cost? Shucks, a circuit breaker saves a whole lot more in production time than it costs new. Today there's darn little excuse for anybody not to use them.

"Here's something else I learned. The guys who really know circuit breakers use I-T-E over any other brand."

Send for the new free bulletin on how circuit breakers benefit industrial plants. Or see your distributor. Write I-T-E Circuit Breaker Company, Dept. SA, 1900 Hamilton St., Philadelphia 30, Pa.



I-T-E CIRCUIT BREAKER COMPANY

IT'S *the decision* THAT COUNTS



...with a fuel, too!

B&O bituminous merits your winning decision for sensible plant operating reasons. (1) Volume supply in wide variety is a sure bet to outlast current competitive fuels. (2) Sources are nearest to major consumption—always dependable. (3) Mining and burning developments continually tailor bituminous to greater efficiency. Bet on B&O Bituminous! **Ask our man!**

CONSULT COAL TRAFFIC DEPARTMENT, B & O RAILROAD
BALTIMORE 1, MD. Phone: LExington 9-0400



BALTIMORE & OHIO RAILROAD
BITUMINOUS COALS FOR EVERY PURPOSE

For More Information Write No. 252 on Inquiry Card—Page 32

Products

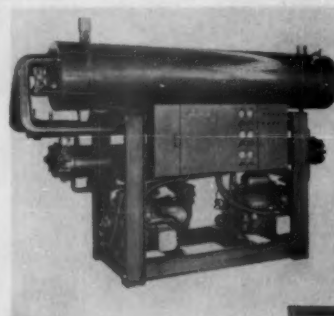
New Carbon Dioxide Welding Gun



A new manual welding gun employing carbon dioxide as a shielding gas is intended for use on mild steel. Air-cooled gun has continuous duty rating of 600 amps. D.C. when using "buried arc" carbon dioxide techniques. It can accommodate hard welding wires ranging from .035 in. through 3/32 in. fed from conventional wire feeders. Gun has lever-type trigger for simple operation and a goose-neck nozzle assembly for use in hard-to-reach areas. **Air Reduction Sales Co., 150 East 42nd St., New York 17, N.Y.**

Write No. 67 on Inquiry Card—Page 32

Packaged Chillers Feature Twin Compressors



New packaged water chillers feature twin hermetic compressors with individual motors for longer life and stand-by protection of refrigeration and air conditioning equipment. Line of 40-250 ton capacity features means of equalizing wear in two-compressors. (Please turn to page 154)



make it

SPANG STEEL PIPE

When it's steel pipe . . .

. . . you're buying pipe with inherent strength and safety. Steel pipe is easy to thread, bend and weld . . . saves you installation time, helps keep construction costs down.

And when you install a steel pipe job, you *know* from experience that it will provide years of satisfactory, trouble-free service. Reliable steel pipe is first choice always for plumbing, air conditioning, steam and radiant heating systems, snow melting, refrigeration, ice rinks and structural uses.

When it's SPANG Steel Pipe . . .

. . . you're buying steel pipe with the *top-quality* reputation. Spang pipe is closely controlled during manufacturing and is thoroughly tested and inspected before shipping.

And when you order Spang, you *know* you're getting top-quality, the best available! Today, you'll find Spang Steel Pipe providing *top-quality* service in thousands of installations in schools, hospitals, industrial plants, office buildings, hotels, apartments, homes and many other types of buildings.

Get the complete story . . .

. . . of Spang Steel Pipe from our new Bulletin No. 509. It describes how Spang is made, shows many typical Spang installations, and contains valuable technical tables. We hope you'll write for a copy.

Meanwhile, your local Spang Distributor is at your service for all your piping needs. Next job, remember for best results: make it Steel Pipe . . . make it Spang! Made in the U.S.A.!

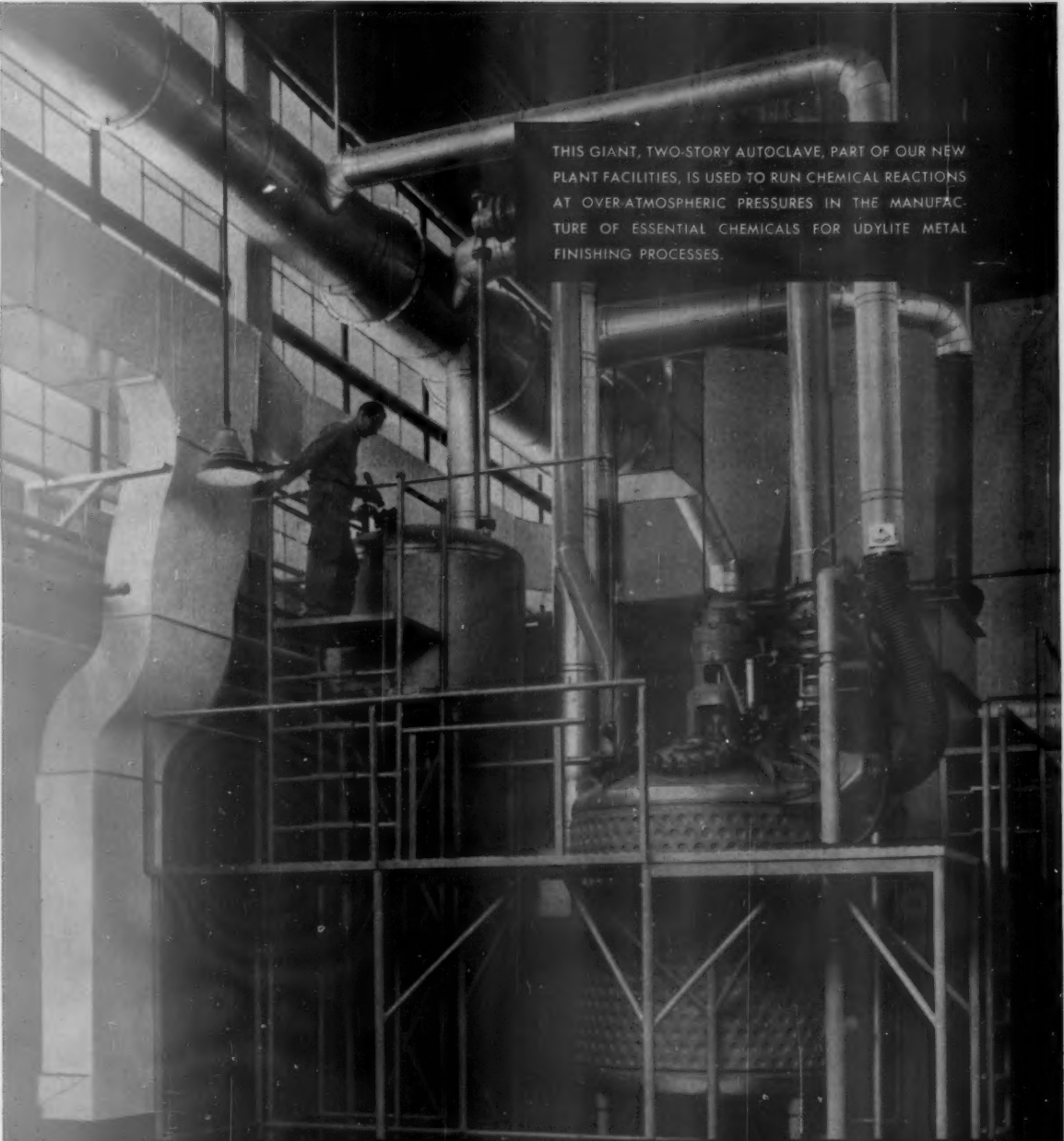


THE NATIONAL SUPPLY COMPANY

Two Gateway Center, Pittsburgh 22, Pennsylvania

Subsidiary of Armco Steel Corporation





THIS GIANT, TWO-STORY AUTOCLAVE, PART OF OUR NEW PLANT FACILITIES, IS USED TO RUN CHEMICAL REACTIONS AT OVER-ATMOSPHERIC PRESSURES IN THE MANUFACTURE OF ESSENTIAL CHEMICALS FOR UDYLITE METAL FINISHING PROCESSES.

\$600,000.00

Invested in your future:

It cost that much to complete additional new plant facilities at Udylite in order to guarantee you: 1—absolute purity of product, 2—stringent quality controls, 3—reasonable price schedules. Now you can depend on these benefits from Udylite for years ahead, as our industry expands.



corporation
Detroit 11, Michigan

.....
on the west coast:
the L. H. Butcher Company

Forward March in 1960...

Udylite offers new products, processes

**MAJOR DEVELOPMENTS IN EVERY PHASE OF THE INDUSTRY
COME FROM THE WORLD'S LARGEST PLATING SUPPLIER**

Udylite steps up the production of new equipment and processes and continues its expanding program of research and new product development. Here are some of the New benefit-packed innovations that Udylite has ready for you NOW.

New Barrel assembly Just released, Udylok-Tempron Barrel Assembly . . . unique interlocking cylinder construction which permits speedy field repair . . . tie-rod-free construction . . . twelve machine screws the only metal used in cylinder . . . advanced ring gear design with heavy duty, four pitch gearing for greater strength . . . longer life . . . made of non-corrosive Udylon . . . and a revolutionary new super-structure design.

New Rectifier line A whole new line . . . completely re-designed from the ground up . . . economies affected with new method of manufacture mean real savings in your original cost . . . keep maintenance and replacement costs minimum . . . fully guaranteed and built to usual high standards of Udylite quality construction.

New Tank lining Brand new tank lining . . . for special applications . . . introducing a new recently perfected material of unusual properties . . . an EXCLUSIVE with Udylite.

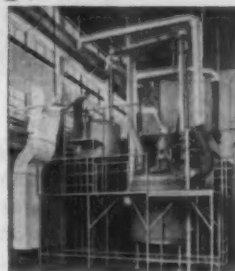
New Filter series Improved . . . high area . . . low pressure filters . . . designed with economy of operation in mind for you . . . long range savings . . . low, low maintenance costs . . . greatly increased efficiency . . . full range of sizes and capacities.

New Processes due Another great forward step in the battle against corrosion . . . A NEW Udylite bright plate process . . . now under rigorous testing for introduction early in the spring . . . a product of the continuing research and development that gave you "The Incomparable 66" and Bi/NICKEL.

New Automatic Machine features Plating automation . . . equipment advances . . . including new skip mechanism . . . 1960 models of Cyclemaster . . . and the famous Udylite V.I.P., automated barrel plating machine . . . to fit economy budgets.

New manufacturing facilities

\$600,000.00 expansion program at Udylite, Detroit . . . installation permits quality controlled production of vital raw materials . . . guarantees source of supply . . . provides you with product of insured purity . . . at a reasonable price.



Giant autoclave . . . new plant facility at Udylite

The newest and the best in plating supplies, equipment and processes . . . products such as those shown here flow constantly from Udylite to industry. Watch for detailed announcements every month. If you'd like to learn more about any of the developments we've talked about right away, just get in touch with your Udylite man today or write to:



corporation • Detroit 11, Michigan
world's largest plating supplier

on the west coast the:
L. H. Butcher Company

IF YOUR PRODUCTS HAVE TUBULAR PARTS THEN CONSIDER LOW-COST **CLEVELITE*** *laminated phenolic tubing*

lighter than aluminum
structurally strong
moisture resistant
in 7 Distinct Grades

Engineers are discovering that time-tested Clevelite has many advantages in products using tubular parts, and at lower unit cost. These advantages are proven daily on the production line and in the field.

TYPICAL APPLICATIONS FOR **CLEVELITE***

Coil forms for radio and television sets... Insulators for electrical equipment... Bushings and spacers for small motors... Cores for transformers... Housings and barrels for toys... Bobbins, dyeing cores, etc., for the textile industry... PLUS many other unique applications.

Write for a copy of our descriptive brochure.

*Reg. U. S. Pat. Off.

**PLANTS &
SALES OFFICES:**
CLEVELAND
DETROIT
CHICAGO
MEMPHIS
LOS ANGELES
PLYMOUTH, WISC.
JAMESBURG, N. J.
FAIR LAWN, N. J.

**THE
CLEVELAND CONTAINER
COMPANY**

6201 BARBERTON AVE., CLEVELAND 2, OHIO
ABRASIVE DIVISION at CLEVELAND, OHIO

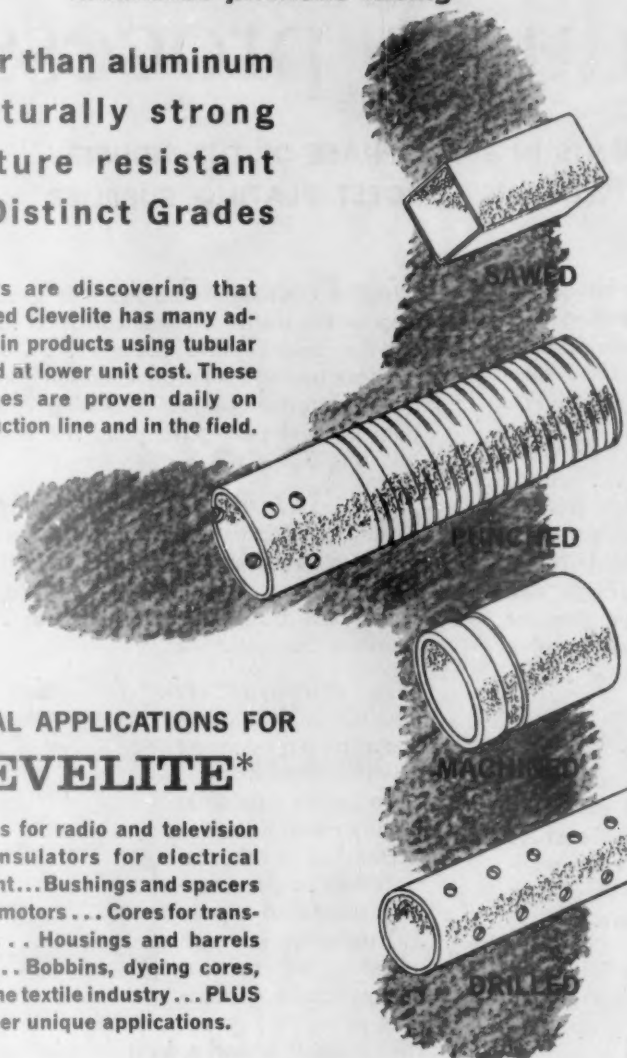
REPRESENTATIVES:

NEW ENGLAND: R. S. PETTIGREW & CO.
10 N. MAIN ST., W. HARTFORD, CONN.
NEW YORK AREA: MURRAY SALES CO.
604 CENTRAL AVE., EAST ORANGE, N. J.
PHILADELPHIA: MIDLANTIC SALES CO.
9 E. ATHENS AVE., ARDMORE, PA.

CHICAGO AREA: McFARLANE SALES CO.
5950 W. DIVISION ST., CHICAGO
WEST COAST: COCHRANE ELECTRONIC SALES CO.
544 S. MARIPOSA AVE., LOS ANGELES
CANADA: PAISLEY PRODUCTS CO. LTD.
36 UPTON RD., SCARBOROUGH, ONT.

CLEVELAND
CONTAINER
CANADA, LTD.
TORONTO &
PRESCOTT, ONT.

SALES OFFICES:
NEW YORK
WASHINGTON
MONTREAL



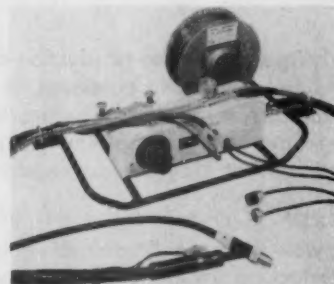
Products

(Continued from page 150)

sor systems as well as protection provided by two motors, either of which will keep the system in operation in the event one motor fails. Dual refrigerant circuits and control panels provide further insurance. Compact, heavy-duty construction throughout. Acme Industries, Inc., Jackson, Mich.

Write No. 68 on Inquiry Card—Page 32

Two New Arc Welding Products



An arc welding torch and an arc welding control with wire drive feature economy, simplicity and ruggedness. Both are designed for consumable electrode welding processes using shielding gases such as argon, helium or carbon dioxide in making horizontal fillets and flat position welds. Skid-mounted control is highly portable, weighing only 55 lbs., and will pass through 18 in. manhole. Torch, with interconnecting gas, water and flexible conduit assemblies, was produced for use with welding control but may be used with other models. National Cylinder Gas Div., Chemetron Corp., 840 N. Michigan Ave., Chicago 11, Ill.

Write No. 69 on Inquiry Card—Page 32

Pre-Measured, Calibrated Stainless Shim Stock

Stainless steel shim stock that is pre-measured and calibrated enforces economical in-plant usage and automatically maintains a stock inventory count. Each coil of stock is calibrated on 1/2 and 1 in. increments through its full 60 in. lengths. After cutting, pre-measured edge shows number of

(Please turn to page 156)



Why management was *so concerned* about Paper Napkins

No one knows better than Management that savings come from a careful regard for costs.

That's why they were concerned when they learned that they could save as much as 20% on paper costs by switching to Fort Howard Napkins in the cafeteria and Fort Howard Towels and Tissue in the washrooms. And to this organization, a saving of 20% was important.

Fort Howard quality Paper Towels, Tissue,

and Napkins are available in a wide range of grades in all well-accepted rolls, folds, and styles. This means you can cut costs by selecting the proper grade, fold, roll, pack, and price range that you require to meet your needs exactly.

There is a Fort Howard representative nearby anxious to demonstrate to you how dining room and washroom expenses can be cut, and high standards of service maintained.



Fort Howard Paper Company

Green Bay, Wisconsin

Sales Offices In New York, Chicago, Los Angeles

America's Most Complete Line of Paper Towels, Tissues and Napkins



© Fort Howard Paper Company

MARCH 14, 1960

For More Information Write No. 257 on Inquiry Card—Page 32

155

SPECIAL WASHERS ☐ U.S. STANDARD WASHERS ☐ FENDER WASHERS ☐
 RIVETING (BURR) WASHERS ☐ LIGHT STEEL WASHERS ☐ FLAT WASHERS FOR
 PRE-ASSEMBLY (SEMS) ☐ S.A.E. WASHERS ☐ MACHINE SCREW WASHERS ☐
 ALUMINUM, BRASS AND COPPER WASHERS ☐ BELLEVILLE TYPE WASHERS ☐
 MALLEABLE BEVEL WASHERS ☐ MINE ROOF WASHERS ☐
 MALLEABLE ROUND WASHERS ☐ EXPANSION PLUGS ☐
 SPRING LOCK WASHERS ☐ HI-TENSILE STRUCTURAL WASHERS ☐
 SQUARE WASHERS ☐ CASTER SHIMS ☐ AN 960 FLAT WASHERS ☐
 MACHINERY BUSHINGS ☐

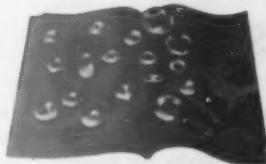


check your washer needs,
JOLIET*
 can supply them all!

*QUALITY WASHERS SINCE 1914

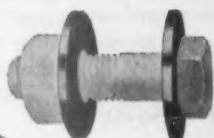
Joliet Wrought Washer Company offers the reserve capacity and flexibility needed to meet both your regular and emergency requirements for washers of all types — standard and special. Capacities range from 1/4" to 8" O.D. with thicknesses from .008" to 1/2". In all metals, all finishes, including heat-treating.

SPECIAL WASHERS

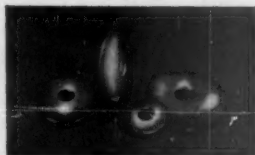


We maintain our own tool and die shop assuring you the utmost in prompt service on new tooling. Your orders are never too large for adequate service, nor too small for personal attention.

Available in steel, stainless, copper, brass, lead, aluminum, bronze. In these finishes: Hardened washers ASTM Specifications, case hardening, carbo-nitriding, dry cyanide cadmium, chromium, copper, zinc di-chromate, phosphate finishes, Parkerizing, hot zinc galvanizing, shot peening, rotoblasting, tempering and electro-plating.



HIGH-TENSILE
STRUCTURAL WASHERS



BELLEVILLE TYPE WASHERS

Write for free 16 page catalog



JOLIET WROUGHT WASHER COMPANY

210 Connell Avenue—Joliet, Illinois

For More Information Write No. 258 on Inquiry Card—Page 32

Products

(Continued from page 154)

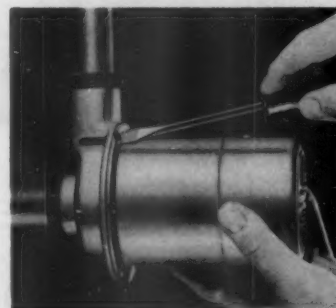
inches remaining. Packaged in self-dispensing box for easy handling and storage, stock is available in 9 standard sizes from .002 in. through .010 in. material thickness, all milled to meet exacting



tolerances. It is made from type 302 stainless steel, rolled full hard-spring temper. Among numerous applications are shimming jigs, tools, fixtures, patterns, washers, electronic parts, etc. N. E. Slavin & Co., 40 E. Cross St., Somerville, Mass.

Write No. 70 on Inquiry Card—Page 32

Low-Cost Compact "Canned" Pump



A low-cost, extremely compact leak-proof "canned" pump weighs less than 7 lbs. but is capable of pumping over 800 gals. per hr. Constructed entirely of corrosion-resistant material, pump produces heads up to 12 ft. and is suitable for pressures to 150 psi and temperatures to 220 degrees F. It can be used on wide variety of solvents, refrigerants and other difficult fluids, and is available for operation on either 115 or 220 volts, single phase, 50 or 60 cycles. Dynapump Div., Fostoria Corp., P.O. Box 35-3, Huntington Valley, Pa.

Write No. 71 on Inquiry Card—Page 32



WORKER COMFORT PLUS!

Featherweight Enduron plastic safety lenses are half the weight of glass!

Some workers just can't take the weight of regular safety glasses. But the minute glasses come off the face may be the minute tragedy strikes! Safety frames with B&L Enduron lenses are the answer. They are available in plano and prescription types.

Enduron is a tough, shatterless plastic, with a specific gravity only half that of glass. Its feathery-lightness is of particular advantage in high correction lenses where thickness adds weight, and in nasal fitting problems where slippage occurs.

Enduron is extremely hard, clear and colorless. It is comparable to glass in impact-resistance and resists organic solvents, acids and alkalis in industrial concentrations. There is little or no fogging.

Mounted in strong, durable, Bausch & Lomb safety frames, Enduron lenses give full eye protection with the fullest possible measure of comfort. Want to see samples? Phone your supplier of Bausch & Lomb Safety Products, or write Bausch & Lomb Optical Co., 90603 Lomb Park, Rochester 2, New York.

Enduron plastic lenses fit all Bausch & Lomb spectacle-type safety frames. Shown above is the popular solid color plastic frame Y-62.

BAUSCH & LOMB



**Protection-PLUS
Safety Products**

protection + economy + worker acceptance

***"We helped a customer
stop frequent outages and
get safe motor protection . . .
by recommending FUSETRON Fuses"***

OSCAR O'NEAL SR., PRES.
O'NEAL ELECTRIC CO., GULFPORT, MISS.

ELECTRICAL INSTALLATION
guaranteed by
O'NEAL ELECTRIC CO.
TELEPHONE UN 3-4393 GULFPORT
NECA
QUALIFIED ELECTRICAL CONTRACTOR

Play Safe! install FUSETRON dual-element FUSES

Mr. O'Neal continues . . .



"Sometime ago, the Gulfport Ice Co., called us in to do their electrical maintenance work. At the time, they were having a great deal of difficulty with motor starting currents causing ordinary fuses to blow. They were using 100, 200 and 400 amp. ordinary fuses to protect the motors.

"These frequent outages disrupted the company's normal operation and created a costly and annoying situation. Just to replace the 400 amp., 250 volt ordinary fuses was costing them about \$40 a month.

"My first recommendation to them was to change to Fusetron dual-element fuses in the proper size for safe motor protection. They did.

"The installation of Fusetron fuses was the 'key' to the problem. In the past five years I do not recall one 400 amp. Fusetron fuse having blown — and outages on the 100 and 200 amp. circuits have been very infrequent."

YOU TOO, CAN GUARD AGAINST UNNECESSARY OUTAGES OR MOTOR BURNOUTS THAT CAUSE MEN AND MACHINERY TO STAND IDLE SIMPLY BY INSTALLING FUSETRON DUAL-ELEMENT FUSES THROUGHOUT THE ENTIRE ELECTRICAL SYSTEM.

throughout entire Electrical System!

In addition to saving you money by protecting against needless outages and motor burnouts

FUSETRON Fuses offer High Interrupting Capacity and Life-Time Dependability Essential to Modern Protection.

High Interrupting Capacity: With electrical network capacities steadily increasing, — a modern protective device must be capable of interrupting the heavy fault currents now available and to be adequately safe to allow for anticipated growth in service demands.

FUSETRON fuses give you this protection. They have an exceptionally high interrupting rating of 100,000 amperes rms symmetrical.

Life-Time Dependability: The increase in available fault currents has emphasized the need for dependability in modern protective devices, otherwise, serious fire and personal injury can result should the device fail to operate when an emergency arises.

FUSETRON fuses provide safe and accurate protection through the years as their operation depends on a simple thermal law. Unlike mechanically operated devices, Fusetron fuses have no hinges, pivots, latches or contacts to stick or get out of order.

Once properly installed, Fusetron fuses require no maintenance, — no periodic inspection and accompanying down-time.

If you are considering a new installation or the modernization of an electrical system — you can be sure of modern, safe, maintenance-free protection in 10 or 20 years by installing Fusetron dual-element fuses now.

For more information on FUSETRON dual-element fuses . . . Write for bulletin FIS.

BUSSMANN MFG. DIVISION
McGraw-Edison Co.
St. Louis 7, Mo.





UNIQUE ELECTRICAL PRODUCT



DESIGN IDEAS OFTEN BEGIN



WITH THESE VERSATILE



STACKPOLE SWITCHES!

Get This GUIDE TO MODERN SWITCHING

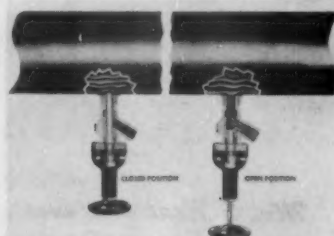
Ask for 8-page Switch Bulletin RC-11D
World's largest slide switch line—over 12 low cost
standard types—dozens of economical adapta-
tions. NEW colored knobs. Special conventional and
miniaturized switches designed and produced for
large quantity users. Electronic Components Division,
STACKPOLE CARBON COMPANY, St. Marys, Pa.



For More Information Write No. 261 on Inquiry Card—Page 32

Products

Sampling Valve Will Not Clog



A sampling valve designed to deliver perfect live samples is unaffected by settlement or clogging. Stainless steel piston completely fills valve body and extends to inner surface of the vessel when in closed position. Where piston is restricted, entire body is left free for full flowing live sample. Two compressible, replaceable Teflon rings seal the valve for perfect closure. Valves are simply installed and come with pipe threads, 3/4 in. male inlet and 1/2 in. female discharge. Strahman Valves, Inc., Florham Park, N.J.

Write No. 72 on Inquiry Card—Page 32

Anti-Dirt Coating for Industrial Use

A new water-like fluid forms a coating that keeps paint dust-free and super-cleanable. Microscopic pores of painted surface are filled to produce slickness that leaves virtually nothing for dirt to cling to. Concentrate is mixed with water, then sprayed, brushed, roller-coated, mopped or wiped on clean interior or exterior surface. Hard transparent coating forms in 15 minutes, at a cost of 1/4 of a cent per sq. ft. DuPont Finishes Div., Wilmington, Del.

Write No. 73 on Inquiry Card—Page 32

CLASSIFIED ADVERTISEMENT

WANT TO BUY

Steel By-Products Discs
2" to 2 1/2" dia. .060 to .125
4 1/2" dia. .060 to .125
6 1/2" to 10" dia. .060 to .125
11" to 12 1/2" dia. .085 to .095
Keystone Lamp Mfg. Corp.
Purchasing Department
Tel. Stratton, Pa. PO 7-3821



Blueprints like these...
moved a complete division
from New York to Barberton...



and put things quickly into place...item by item!



America's Most Recommended Mover

● Moving a complete division (office furniture and equipment . . . employee's household goods, too) is a pretty large order.

But, Mayflower takes these kinds of jobs in stride. They have the special equipment and the trained movers to handle any size company move smoothly, efficiently and safely.

Babcock & Wilcox selected Mayflower. Every phase of the move was blueprinted to speed placement of furniture and equipment in the new Barberton, Ohio plant. And, to eliminate the least interruption in business, the moving of all six floors of furniture was accomplished in three successive weekend shipments . . . using 61 Mayflower vans.

Whether you want to move an office or a complete headquarters—a Mayflower "blueprint move" saves time and money. Your agent will help you plan it right!

AERO MAYFLOWER TRANSIT COMPANY, INC. • INDIANAPOLIS, INDIANA

For More Information Write No. 262 on Inquiry Card—Page 32

For More Information about ad on following
page Write No. 263 on Inquiry Card—pg. 32→

MARCH 14, 1960

161

Yale tractor shovels

are setting new performance standards wherever they are used. Compare Yale power against any other in its field. Only Yale gives you a torque converter and fully automatic transmission with a 72-hp. 6-cylinder engine. Compare Yale action! 2500-lb. carry capacity bucket. Exclusive 45° bucket tipback for faster loading and minimum spillage. 6 ft. dumping clearance—highest in the field. Compare Yale safety! Safety-curve lifting members never rise alongside the operator. Front and rear working lights for additional security. Compare Yale design! Rugged, simplified, more efficient. Brakes and electrical system sealed. 10-ply tires. Many parts interchangeable with Yale Gas trucks. Compare these features with a demonstration in your own plant. See why you'll save time and money.

For full information, or a demonstration, call your Yale representative, or send for free brochure #5255A to The Yale & Towne Mfg. Co., Materials Handling Div., Phila. 15, Pa., Dept. YT-4.

Yale Materials Handling Division, a Division of The Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa., San Leandro, Calif., Forrest City, Ark. Products: Gasoline, Electric, Diesel and LP-Gas Industrial Lift Trucks Worksavers • Warehouse • Hand Trucks • Industrial Tractor Shovels Hand, Air and Electric Hoists.

YALE®

INDUSTRIAL LIFT TRUCKS
TRACTOR SHOVELS • HOISTS

YALE & TOWNE

This illustration suitable for framing, available upon request





Instant Inventory Control

OF PARTICULAR INTEREST to purchasing agents is a recent development in data processing by Friden, Inc., San Leandro, Calif. The new device provides instant information to purchasing departments for positive inventory control.

Here's how it works: A master edge-punched card is used for each item carried in stock. In the stockroom, an unskilled operator inserts the card in a transmitter, and sets the dials to indicate variable information, such as quantities.

The receiver, located in the purchasing department, produces

the data as punched tape. The accumulated inventory data is periodically processed to check current inventory against requirements and to facilitate reordering.

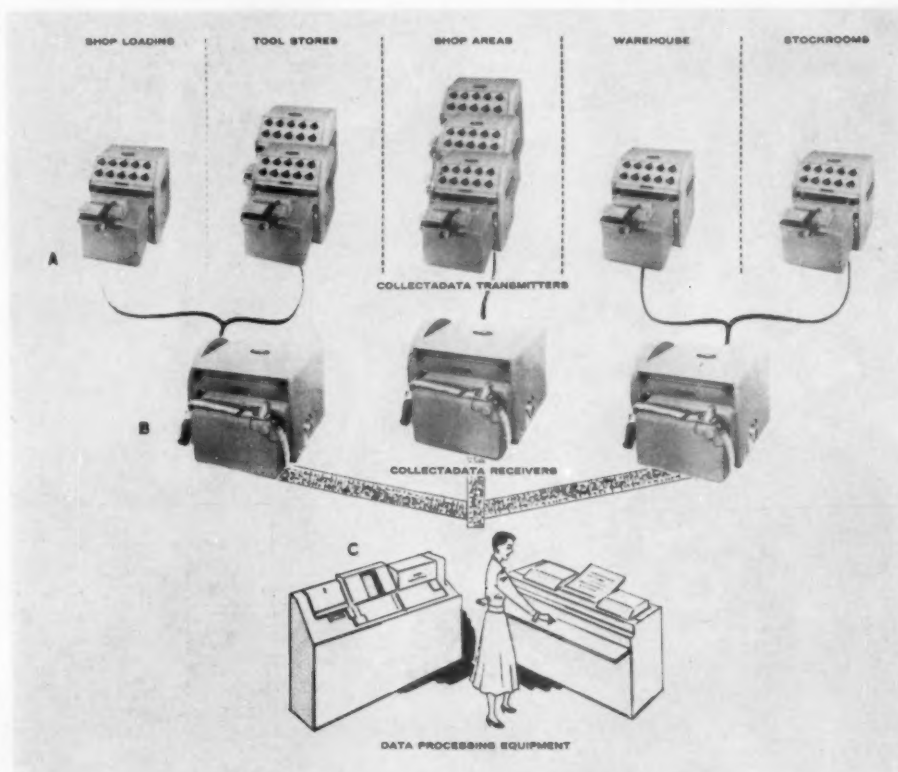
Additional transmitters can be set up in the warehouse, tool stores, and at various points in the shop area. This combined data is fed continuously to the receiver, forestalling shortages and speeding up reports.

Although there is no limitation to the number of transmitters that can be connected to a single receiver, the volume of use may cause a practical limitation to be set. If necessary, a "priority" sys-

tem can be included which would operate like a telephone switchboard; the system is able to hold data until the receiver is clear.

The returns derived from installation of a system like this will, of course, vary with each company. But purchasing agents for both large and small firms should remember this: a data collecting system, like most other automatic office equipment, can be installed on a "building block" basis. Even one transmitter and one receiver can be operated economically, with additional transmitters brought into the system as the volume warrants.

Automatic transmittal of inventory information from edge-punched cards directly to receivers in the purchasing department is now possible.



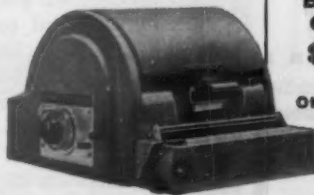


Everything's perfectly clear—they're Verifax copies!

Verifax copies are dry, white, easy-to-read . . . accurate in every detail. They won't fade or darken . . . will last as long as typed records. And they're as easy to handle, file or mail. All of which is mighty important in business.

See how you can make 5 of these dry, more usable copies in 1 minute for 2½¢ each with Kodak's \$99.50 Verifax Bantam Copier, which outperforms other makes of copiers costing up to 4 times as much!

Phone local Verifax dealer (see Yellow Pages under duplicating or photocopying machines), or write Eastman Kodak Company, Business Photo Methods Division, Rochester 4, N. Y. Prices quoted are manufacturer's suggested prices and subject to change without notice.



**VERIFAX
BANTAM
COPIER**

\$99⁵⁰

Other models
to \$425

Verifax Copying

DOES MORE . . . COSTS LESS . . .
MISSES NOTHING

Kodak
TRADEMARK



Be Just as
Proud of Your
Erasing
as You Are of
Your Typing!

Even on today's superb machines—electrics or standards—your typists make occasional mistakes. But you can be just as proud of your erasing as you are of your typing. Erasing results are almost unbelievably clean and quick with these specially selected **Weldon Roberts Erasers** for correcting impressions made through carbon or fabric ribbons.

JUST TWO EASY ERASING STEPS:

1. NO. 448 GREEN GLOW

Removes surface carbon to prevent smearing. Soft green rubber encased in spiral paper wrapping with pull-string for easy reprinting.

2. NO. 3650 GRAYPOINT WHISK

Removes the final image. Wood-cased eraser with quality gray rubber core. Easily repointed in any pencil sharpener or with a knife. Hexagonal; won't roll off your desk. With whisk for brushing away eraser crumbs. (NO. 365 GRAYPOINT, Same eraser without whisk.)

OR: NO. 378 GRAYPOINT

With same quality gray rubber core. Spiral paper wrapped, like NO. 448 Green Glow. The Graypoint Erasers are also superb for erasing impressions typed through fabric ribbons.

Order these erasers today
from your stationer!

**WELDON ROBERTS
RUBBER CO.**

365 Sixth Avenue, Newark 7, N. J.

World's Foremost Eraser Specialists

**Weldon Roberts
Erasers**

Correct Mistakes in Any Language

For More Information Write No. 265
on Inquiry Card—Page 32

Office Equipment



All-transistor intercom system has been designed to fit into the operating decor of the modern office. It is a product of **Talk-A-Phone Co.**, 1 No. LaSalle St., Chicago. New standard features include a monitoring signal which visually indicates to a non-private station that it is being monitored; an incoming call chime; an external relay control for use in high noise level areas; and a reciprocal power supply for use where no electrical outlet is available.

Write No. 74 on Inquiry Card—Page 32



Many office duplicating problems will be solved with the new machine introduced by **Ditto, Inc.**, Chicago. The machine performs four office functions: it will make direct (spirit) process masters; it will make offset masters; it will make facsimile copies; and it laminates.

Write No. 75 on Inquiry Card—Page 32

Correct parliamentary procedure (based on Robert's Rules of Order) is important to today's meetings. A Slide-A-Rule has been designed for members of all types of clubs and organizations. It is 9 1/4" x 4" and made of stiff board. It answers such questions as, type of motion permitted, whether a motion is debatable, whether a

vote is needed, and the correct time and procedure for interrupting a speaker. Selling for \$1.00, it is being distributed by the **Junior Chamber of Commerce**, Box 573B, Grand Rapids, Michigan.

Write No. 76 on Inquiry Card—Page 32



An automatic vending machine whose complete menu can include more than 100 different food and drink items, at any price from 5 to 50 cents has been introduced by **Rowe Manufacturing Company**, 31 East 17th Street, New York 3, N. Y. Combinations can range from coffee-pastry-soft drink grouping to a full automatic cafeteria.

Write No. 77 on Inquiry Card—Page 32

Make paper handling easier and safer



Get ADVANCO punchless paper holders

No holes to punch—no holes to tear. Easily insert or remove sheets. Your papers are in order, safe—the Advanco clip bulldog-grips 1 to 150 sheets. Only 2 parts—lasts indefinitely.

Ask your stationer!

If he doesn't carry Advanco, write us NOW for name of dealer nearest you.

ADVANCO
MADE IN U.S.A. REG. U.S. PATENT OFFICE

ADVANCO PRODUCTS, INC.

76-05 51st Avenue, Elmhurst 73, N. Y.
For More Information Write No. 266
on Inquiry Card—Page 32

PURCHASING

Only Hammermill Graphicopy[®]

Papers come
in this sturdy,
re-usable
carton



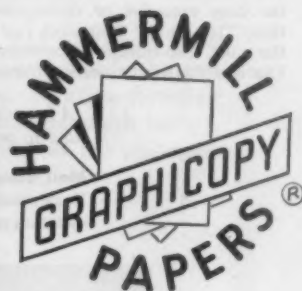
You'll find a score of uses for the unique Hammermill Graphicopy Paper carton. This carton is designed to be used again and again. It is extra strong—yet it opens easily without ripping the carton or tearing your fingernails. Just pull the top to open and tuck it in again to close. The carton is perfect for deliveries, for filing and for storage. You'll like its convenience in use and re-use.



Graphicopy Papers include 275 items in 19 different grades. Each has its own number to simplify ordering. With the handy Graphicopy "Paper Selection Guide" you're sure of getting just the right paper you need for all of your printing, duplicating and general office use.



Here's the *big* reason for buying Hammermill Graphicopy Papers! They're made right to run right on your office equipment. Get your "Paper Selection Guide" now. Ask your Hammermill supplier or write Hammermill Paper Company, 1461 East Lake Road, Erie, Pennsylvania.



Plain talk about machine dictation:

"OKAY, a dictating machine sounds like a great idea...but which one?"

WITH so many makes and types of equipment on the market, it's not hard to get confused. A smart move is to look over Edison Voice-writer's *complete* line of quality machines—there's one that's ideal for each particular

dictation requirement in your organization.

Best of all—with Edison Voicewriter, you deal with a single nation-wide service staff . . . one with over 70 years' experience in business dictation!



For your executives and "volume" correspondents . . . Voicewriter!

The Voicewriter offers every convenience for the busy executive or correspondent. Lets them "talk away" their work just by taking the mike. The Edison Voicewriter Diamond Disc is easy to handle—easy to transcribe from.



For your "occasional" correspondents . . . Televoice!

Televoice is ideal for companies where many individuals require dictating facilities. Connects each one to a central transcribing point through a handy dictating phone. Work gets out faster, much more economically.



For your man on the go . . . Midgetape!

You can use the palm size Midgetape recorder for so many jobs! To record conversations . . . for verbal note taking . . . as a sales training tool! Battery operated. Only 3 lbs. light. Completely portable. Use it anywhere!

A complete line of accessories—telephone recorders, conference units, carrying cases and so on—is available to "tailor" Edison equipment to your particular requirements.

Mail coupon today for details on the Voicewriter equipment to match all your dictation needs. No obligation, of course.

Edison Voicewriter

A product of Thomas A. Edison Industries.
McGraw-Edison Company, West Orange, N.J.
In Canada: 32 Front Street W., Toronto, Ont.



To: Edison Voicewriter, West Orange, New Jersey
Okay, I'm interested! What do you think Voicewriter can do for me and my organization?

Name _____

Organization _____

Street _____

City _____ Zone _____ State _____

PM-314

For More Information Write No. 268 on Inquiry Card—Page 32



Bostitch office staplers *do* last a long time. It's not unusual to find models in excellent condition after 30 and more years of steady use.

Fine as these old-timers were—and still are—the machines we make today are better. Not only are they better, but they do more. The new B8R is actually four tools in one—a stapler, a tacker, a stapling plier and a remover.

The B12 Standard is probably the handsomest stapler ever to grace a busy desk. It can be adjusted to pin temporarily or fasten permanently in a second.

The heavy-duty B5 is for desks where there's

a lot of stapling. . . . Advertising, printing and engineering departments find that Bostitch deep throat staplers with reaches up to 18 inches are particularly useful. . . . Salesmen and outside people, such as routemen, like the compact pocket-size Traveler, complete with staple remover and pocket-clip.

Your Bostitch Economy Man will gladly show you these and other models and explain the uses of each. His facts on improving office fastening and lowering fastening costs are worth having. He's listed under "Bostitch" in the telephone book, or you can write direct.

Fasten it better and faster with

 * **With every Bostitch machine you get:** *
 * assurance of the right combination for your needs from *
 * 900 staplers and over 200 staples . . . an extra margin of *
 * quality . . . nation-wide parts, service and technical aid *
 * . . . dependable supply from the industry's most modern *
 * factory . . . and we stand behind every Bostitch machine, *
 * making sure it operates to your complete satisfaction. *
 * *****



723 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND



NCR PAPER
is preferred by
cost-conscious
businesses
everywhere
because it produces

MULTIPLE COPIES *without* CARBONS

NCR PAPER SAVES MONEY.

The price of NCR Paper is sometimes higher than forms with carbons, but the time saved and other advantages far exceed any increase in price.

NCR PAPER SPEEDS HANDLING.

Repeated testing proves the average clerical worker can do 30% more work per day if he works with forms on NCR Paper! NCR Paper eliminates the need for carbon paper handling and disposal.

NCR PAPER WON'T SMEAR.

Regardless of the number of times a copy may be handled, the print will not smear or smudge. Because it eliminates carbon paper, NCR Paper will not soil hands or clothing.

NCR PAPER PREVENTS ALTERATIONS.

NCR Paper can be erased—but not without detection. This built-in protection makes it one of the safest papers available for business forms.

NCR PAPER IS EASY TO USE.

It produces up to 5 copies merely from the pressure of a ball point pen or pencil, and 8 or more copies with a business machine or typewriter.

NCR Paper is ideal for all types of business forms! Call your local printer or forms supplier today, and he'll be glad to provide you with free samples.

ANOTHER PRODUCT OF

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio

1039 OFFICES IN 121 COUNTRIES • 76 YEARS OF HELPING BUSINESS SAVE MONEY

For More Information Write No. 271 on Inquiry Card—Page 32

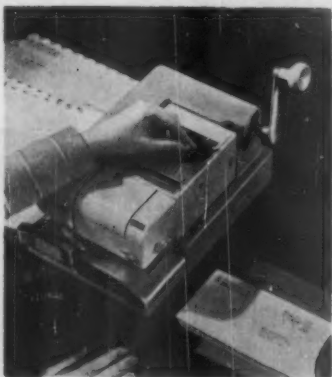
**NCR PAPER
ELIMINATES
CARBON PAPER**

Office Equipment



Automatic production of positive prints from negative microfilm with push-button operation is possible with the new reader-printer produced by Documat, Inc., Belmont, Mass. Both roll film and unitized film may be either read or printed, or both. The entire control head rotates through a complete circle thus making it possible to obtain an upright picture no matter which way the picture was taken or the film inserted into the reader.

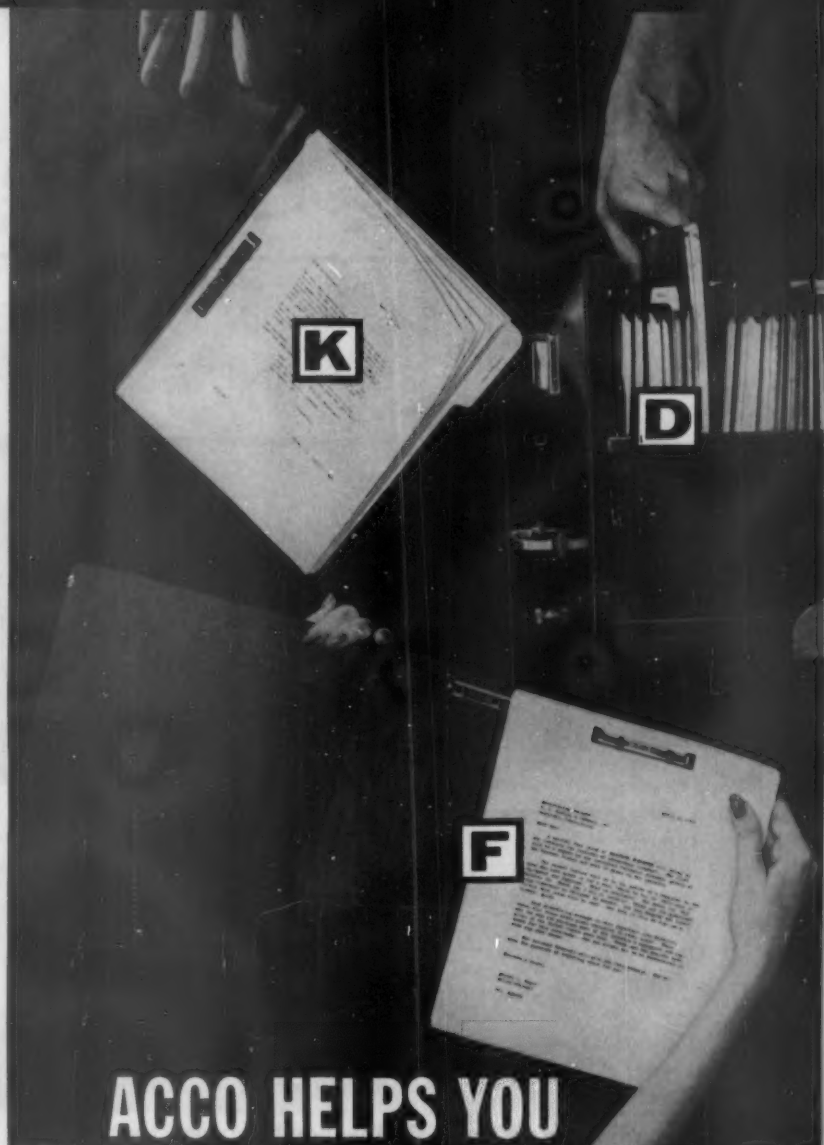
Write No. 78 on Inquiry Card—Page 32



Desk model mailing machine will seal, stamp and stack letters in one operation. The new unit was recently introduced by Pitney Bowes, Inc., Stamford Conn. Included as standard equipment with the new machine are a lightweight meter carrying case, an envelope stacker that holds up to 40 letters, and a parcel post tape dispenser. You don't have to be a big mailer to enjoy the savings and services of metered mail. Of all meter users, 36% spend less than \$100 a month for postage and 20% spend less than \$50.00.

Write No. 79 on Inquiry Card—Page 32

MARCH 14, 1960



ACCO HELPS YOU DO IT FASTER!

Keeps papers spillproof, secure, in place. Saves re-filing. Speeds finding. Ends "missing paper" panic. **D**urable, genuine pressboard folders are trim, firm, sag-proof. Save finding time—and drawer space. **F**ast transfers—old file slides out, new fastener slides in!

ASK FOR ACCO's new booklet
"Ideas That Save Time and Space"
—available free at office outfitters.

Or write: ACCO PRODUCTS,
A Division of Natser Corporation, Ogdensburg, N.Y. - In Canada: Acco Canadian Co., Ltd., Toronto

ACCOBIND®
GENUINE PRESSBOARD FOLDERS

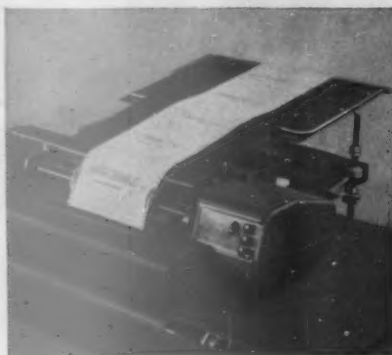
® REG. T.M.

For More Information Write No. 270 on Inquiry Card—Page 32

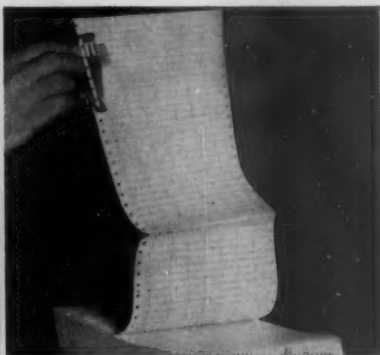
NEW

Moore Speediflex

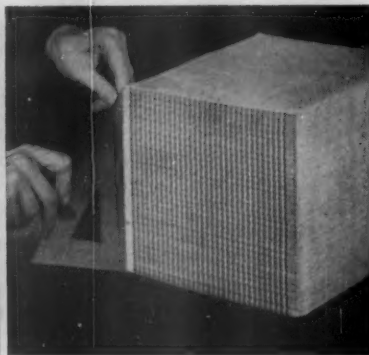
GIVES YOU THESE THREE
FORMS-HANDLING BENEFITS



1 PERFECT FEEDING—The entire set of parts and carbon feeds, naturally and in perfect alignment, around the writing platen.



2 PERFECT REGISTER, because there's no tenting or peaking, and both sides flow freely in natural, flexible movement.



3 PERFECT REFOLDING in neater square packs results from still another advantage—Moore's unique way of perforating the sets.

This Moore 'first'—a brand new concept—results in new forms-handling efficiency for users of continuous marginal punched forms. The revolutionary new dimension is the flex-cut carbon. It acts as a flexible bond between the various parts, and allows the Speediflex unit to flow naturally without 'tenting' or 'peaking,' aligning at the point of writing for perfect part-to-part register. This great new form introduces many other forms-handling benefits. For a demonstration, look up the Moore man in the telephone directory or write the nearest Moore office.

Speediflex is a patented product of Moore Business Forms, Inc.

MOORE BUSINESS FORMS, INC., Niagara Falls, N. Y.; Denton, Texas; Emeryville, Calif. *Over 300 offices and factories throughout the United States, Canada, Mexico, Cuba, Caribbean and Central America.*



Build control with

MOORE BUSINESS FORMS

THE SECRET OF SPEEDIFLEX

The parts are bonded together by flex-cut carbons, allowing flexibility in movement of forms that has never been possible before.



JUST LOOK AT THIS
NEW FREE BOOK ON
PURCHASING



NOW YOU CAN KNOW IN TEN MINUTES WHETHER YOUR PURCHASING CAN BE IMPROVED!

Also, you can know exactly where and how it can be improved! This is a strong statement... but we can back it up with this new fully illustrated **FREE** booklet which shows in detail the latest Purchasing techniques... and how easily they can be applied to your present purchasing setup. *It is the most comprehensive and thoroughly practical book on Purchasing ever produced for American business!*

The systems shown in flow-chart form in this book are based on years of realistic search for the most practical purchasing effectiveness... coupled with the very latest progress in this field — including Automation, where it can be advantageously applied to purchasing.

But this book is so arranged as to help large and small firms alike. It shows how fast effective sound purchasing in any setup has to be based on *all* the necessary facts on a requisitioned item being *instantly* available for prompt sound decision... and, on the most efficient follow-up control. Equally important, it shows simplified work steps which *relieve the buyer of details*... and save much clerical time.

Now as never before Purchasing has become the focal point of

the entire production and distribution system. Even if you have an excellent purchasing system now, you may find the few minutes necessary to go through this book worth while if only for the satisfaction of knowing that nothing has escaped you. Or, if you have detected some weaknesses in your present setup, then this book will enable you to quickly analyze and correct those particular weaknesses.

Whatever your responsibility in connection with purchasing, you can't afford to miss this book. The potential savings in time and money from one idea alone may be of great value to you. Send the coupon TODAY!

Remington Rand

DIVISION OF SPERRY RAND CORPORATION
Room 1343, 315 Park Avenue South, New York 10

Kindly send **FREE** booklet X1855—Fast, Effective Purchasing.

NAME & TITLE _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Office Equipment

New and simplified **microfilm recorder** requires no focusing and has its own built-in green-ray lighting which records details sharply. It is portable and may be purchased outright or leased on a monthly basis. The new unit is a product of **Regiscope Corporation of America**, 799 Broadway, New York 3, N. Y.

Write No. 80 on Inquiry Card—Page 32



Office chairs featuring molded contour seats have been introduced by the **Columbia-Hallowell Division**, Standard Pressed Steel Com-

pany, Jenkintown, Pa. The new group includes six models: junior executive swivel chair with arms; armless junior executive swivel chair; two guest arm chairs; armless guest chair; and secretary-posture chair. All models feature foam rubber seats.

Write No. 81 on Inquiry Card—Page 32



Visual control or **schedule board** comes complete with all elements to create custom layout. Fifty flexible plastic strips are held on board at the edges, slide up and down and snap in and out for rearrangement. Entries or notations are made directly on the

plastic strips with a grease pencil and may be erased with a cloth or tissue. The new board is a product of **Garrison Machine Works, Inc.**, 519 Bannock Street, Dayton 4, Ohio.

Write No. 82 on Inquiry Card—Page 32

A new 20-page catalog of **standard business forms** was announced by **Consolidated Business Systems, Inc.**, 400 Jersey Avenue, New Brunswick, New Jersey. The brochure describes and illustrates such forms as, purchase orders, credit memos, quotation and continuous forms.

Write No. 83 on Inquiry Card—Page 32

Purchasing agents are offered a **free working kit** of one time carbon papers developed for forms to be used on high-speed tabulating equipment. Included in this kit will be samples of a new non-bleed carbon for use in forms containing offset plates. The kit may be obtained from **Port Huron Sulphite & Paper Co.**, Port Huron, Michigan.

Write No. 84 on Inquiry Card—Page 32

IF YOU USE CARBON RIBBONS

SWITCH TO



FOR FINEST REPRODUCTION RESULTS

- DISTINCTIVE EXECUTIVE CORRESPONDENCE
- ORIGINALS FOR OFFSET DUPLICATING MASTERS
- XEROX COPY
- COPYING WORK ON ALL WET OR DRY COPYING EQUIPMENT



Beautiful sharp, black, opaque reproduction of typing and an extensive variety of copies. Exceptional results, because of M/PR's thin, no-break, no-tear, extra long *MYLAR plastic film, inked with an exclusive Old Town formula.

TEST DEMONSTRATION. Write us on your letter-head for details. State your requirements and type of machine or machines involved.

*Reg. T. M. E. I. DuPont Co.



OLD TOWN CORPORATION

Established 1917

750 Pacific Street, Brooklyn 38, N. Y.

World's Foremost Makers of Carbons, Ribbons, Duplicators and Duplicator Supplies

For More Information Write No. 274 on Inquiry Card—Page 32

— COMING —

PURCHASING MAGAZINE'S ANNUAL VALUE ANALYSIS ISSUE

Hundreds of Cost-Saving Case Histories, plus a study of Ford Motor Company's extraordinary cost and purchase analysis department.

MAY 23 — WATCH FOR IT — MAY 23

For More Information about ad on facing page Write No. 275 on Inquiry Card—pg. 32→

PURCHASING



A new life for old tape ...through IBM service

IBM offers a unique customer service: RECLAIMING OF USED IBM MAGNETIC TAPE. At a nominal charge, this service provides for complete testing of a reel of tape and removal of all nonpermanent defects accumulated during use. Where it is not possible to reclaim the entire reel of tape, we will—at no extra cost—remove the longest perfect section and return it to you.

Of the thousands of reels of tape tested during the past two years, over 50% were returned to the customer intact, completely free of contamination...ready for a new life of service. Of the remaining reels tested, many were returned to the customer with long sections of perfect tape.

The very concept of reclaiming used tape stems from the confidence we have in the quality of our Magnetic Tapes. We know the quality is there because we have never taken for granted either the accuracy or the durability of our Magnetic Tapes. Every bit...of every inch...of every reel...of IBM Magnetic Tape...is tested for perfection. We leave no margin for error—nor should you—for the cost of reliable tape is insignificant when you consider the savings which result from its use.

Your local IBM Sales Representative will explain how you can save by using tested and retested IBM Magnetic Tapes...and how, in many other ways, IBM helps you to enjoy Balanced Data Processing.



IBM®

SUPPLIES

Association News

Alabama Buyers and Sellers Learn How to Meet Foreign Competition

A SOUTHERN STEEL company executive recently offered three ways by which the American businessman can rival the competitive vigor of industry in Western Europe and Asia.

Arthur V. Wiebel, president of the Tennessee Coal & Iron division of United States Steel Corp., made his suggestions at the Thirteenth Annual Seller-Buyer Dinner sponsored by the Purchasing Agents Association of Alabama.

The Birmingham industrialist discarded the protectionist idea of closing our ports to foreign-made products because he felt it would not solve the basic problem. "We have no patent on closing ports," Mr. Wiebel pointed out, "and secondly, as useful as tariffs, embargoes, quotas and boycotts might be, they provide only temporary relief."

Steelman Wiebel spelled out his formula: "First, through research and development, how

well we develop new methods and better products; second, how well we continue to improve our productive efficiency; and third, how well we sell and service our products." To sell a better American product and to sell it more vigorously both here and overseas obviously would help lick foreign competition, he said.

The escape solutions being used by some companies are not the answer to the basic competitive problem. "John L. Lewis recently said that about a thousand American companies have plants abroad and employ one million foreign workers," Wiebel declared.

"While American steel companies have generally not followed this course, the trend and the fact that there is even talk of building more plants outside our country should be weighed very thoughtfully by labor leaders and by all who are concerned

about our national growth."

Mr. Wiebel borrowed from U.S. Chamber of Commerce statistics to point out the tremendous economic impact caused by the importation of foreign steel through southern ports.

Who are the Leaders?

He immediately turned back, however, to a positive attack by asking and answering two questions. "Aren't we still the leaders in technology and in organization for production? Even with the new plants, equipment and new approaches to production in foreign countries, can't we hold our own?"

Of his three answers to foreign competition, Mr. Wiebel stressed the third. "Better salesmanship and service can help; research and development can help by devising better products and methods; but the basic problem will be solved to the best advantage of all concerned as we are able through greater productive efficiency to meet competition. For, we must compete."

Clinton E. Wiberg, city of Birmingham purchasing agent and president of the Alabama Association presided. George L. Wilson, Jefferson County purchasing agent and chairman of the annual event, introduced Mr. Wiebel to the large audience of purchasing agents and salesmen.



The head table at the annual buyer-seller dinner in Birmingham had many dignitaries. At the microphone is C. E. Wiberg, president of the Association;

on his right is George L. Wilson, general chairman of the dinner; and on his left is Arthur V. Wiebel, guest speaker.

**SAVE TIME!
SAVE MONEY!**

AT YOUR SERVICE!

**READY FOR
SHIPMENT
IN 48 HOURS**

Small and medium orders of
U.S. Royalite
ABS THERMOPLASTIC SHEETS

To insure you substantial savings of valuable time and to give you volume prices on even small orders, U.S. Rubber has now put into effect a standard warehousing and pre-packaging plan. For the first time, small and medium quantities of high-impact, thermoplastic U.S. Royalite—which include 36 combinations of the most popular gauges and colors—are stocked and pre-packaged at the factory, ready

to be shipped in quantities as small as 3 sheets, 54" x 94". Result: within 48 hours from the moment your order arrives, your shipment of U.S. Royalite is set to go... at prices that save you up to 20%. Don't fail to take advantage of this time-and-money-saving opportunity...soon! For immediate service phone Chicago—Dickens 2-1800—Sales Service Dept. or write below for information and samples.



the tough, lightweight, handsome sheet plastic fortified with rubber. Unaffected by oils, greases, most acids, alkalis. Forms to any shape in sharp detail, with no seams or rough edges. Already used for products like luggage, truck liners, housings, containers.



ROYALITE PLASTIC PRODUCTS
United States Rubber

2701 North Pulaski Road, Chicago 39, Illinois

For More Information Write No. 276 on Inquiry Card—Page 32

MARCH 14, 1960

177



Association News

Through the eye of PURCHASING'S Camera



SAN DIEGO—Distributors and maintenance committee members recently held a pre-meeting panel discussion. Participating (left to right) are: James Garry, Fred F. Anteline, Inc.; Douglas Reid, S. R. Frazee Co.; John A. Mottis, City of San Diego; Fred R. Collier, Automotive Warehousing Co.; Joe O'Connor, San Diego Engineer's Supply Co.; Ernie Cooper (partially hidden), Radio Parts Co.; Ronald Woodhill, R. W. Smith & Co.; and George W. McAfee, Ets-Hokin & Galvan.

NASHVILLE—S. L. Jackson, Humphreys Gold Corp. and 7th District vice president, is surrounded by smiling faces of Nashville Association officials. They are (left to right): J. O. Bush, Washington Mfg. Co.; Charles Horsley, Moore-Handley Hardware Co.; Bobby Johnson, Baird-Ward Printing Co.; and Vince Miller, Aladdin Industries. ▼



Ladies and Veterans at Milwaukee Assn.



Paul J. Wimsey, Johnson Service Co., looks over a textbook on purchasing with his new confreres: (left to right) Isabelle Peterson, Standard Sheet Metal Co.; Lydia Stetz, Milwaukee County; and Agnes C. Maher, Cream City Boiler Co.



A number of veteran P.A.'s were at a recent meeting. Shown here are (left to right): Joseph W. Nicholson, purchasing consultant; Walter E. Radke, A. Geo. Schultz Co.; and Fred E. Hakeo, Allis Chalmers Co.



Purity-control of

National Lock Company die castings

is measured to the third decimal...



The Spectrograph accurately measures all metals in the zinc alloy and is the basis for controlling the alloy within the limits established by the American Society for Testing Materials.

Excessive amounts of impurities in zinc die castings effect intergranular corrosion which, in turn, causes weak, brittle castings.

Here, within National Lock Company's complete die-casting department, purity-control of our zinc alloy die castings is a matter of sound technical knowledge, constant vigilance and the finest equipment and facilities metallurgical science can provide.

Our spectrograph accurately analyzes all metals in the alloy . . . to the third decimal. Our X-Ray machines check the soundness of the castings "all the way through." Humidity and salt spray cabinets, electronic, magnetic and chemical instruments are other pieces of precision equipment found in National Lock's chemical and metallurgical laboratories.

Die casting machines for both conventional and vacuum processes, automatic plating equipment, automatic painting and lacquering machines help make National Lock zinc alloy high-pressure die castings superior in every way.

Our experienced, highly skilled engineering and production personnel will help you with your design and production problems.

High-quality finished zinc die castings since 1933.



NATIONAL LOCK COMPANY
ROCKFORD, ILLINOIS

CABINET HARDWARE • LOCKS AND LOCKSETS • BUILDERS HARDWARE • FASTENERS • REFRIGERATOR HARDWARE • RANGE HARDWARE • PLASTICS

MARCH 14, 1960

For More Information Write No. 277 on Inquiry Card—Page 32

179

New York PA's Hear Furniture Buying Tips

PURCHASING AGENTS in New York were recently treated to a vigorous discussion on, "How to Buy Office Furniture, Equipment and Supplies."

It was sponsored by the professional development committee of the New York Purchasing Agents Association and was set up as a panel of three speakers. Robert F. Ames, purchasing representative of U. S. Steel Corp. led off. Mr. Ames explained the various methods and techniques used to achieve the greatest value.

"Purchasing should be given a free hand," he advised. "This is particularly true in the area of

office supplies, where it is so highly competitive."

The second speaker on the program was Ben Itkin, dynamic president of Itkin Brothers, Inc., one of the country's leading dealers in office furniture.

Mr. Itkin brought various parts of desks with him to demonstrate that there is more to a desk than the price. "The astute purchasing agent," he said, "looks inside the desk. Don't be misled by the beautiful finishes on desks. Years ago desk tops were two inches thick and your predecessors were encouraged to judge the quality of the desk by the thickness of the top. Today you are being

asked to do the same thing except that now they are pointing to the finish.

Mr. Itkin went on to discuss the various features a purchasing agent should look for when buying desks. He suggested that a few dollars more in price might easily increase the life of a desk tremendously. Some of the more salient features to watch for are:

- An oak interior does not mean a poor quality desk. The important point is whether the oak is chemically treated. If it is, most problems of warping will be eliminated.

- Check for dovetailing.

- Check the leg posts. One of the biggest things to hit the office furniture market is a densified post which prevents chipping, and thus, tearing of women's stockings.

- When it comes to steel furniture—ask if it has been bonderized. This method will prevent rust.

- Find out if the steel furniture has been electrostatically sprayed or dip sprayed. The first method is recommended.

- The plastic top—application of this top is critical. Tremendous pressure is required to prevent "peeling."

- Take the drawers out and see if glides are used. Wood should not be used against wood, nor steel against steel. The best glides currently being used are made of nylon.

The third panel member was Philip H. Meyer, president of General Office Supplies Co. Mr. Meyer documented his talk by citing various case histories of savings possible through supplier-buyer cooperation.

"One client," Mr. Meyer told the group, "seemed to be using an extraordinary amount of pencils. When we asked him to look into the situation, the purchasing agent found the pencil sharpeners to be of poor quality. They were literally eating away the pencils at a tremendous rate."

The professional development committee was extremely pleased with the turnout of more than 70 New York area purchasing people. Similar meetings are being planned for later in the year.

For More Information about ad on facing page Write No. 278 on Inquiry Card—pg. 32→

PURCHASING



Members of New York's professional development committee sat with the panelists at a recent "How To Buy. . ." forum. Seated (left to right) are: W. J. Heubach, Union Bag-Camp Paper Co.; R. F. Ames, U. S. Steel Corp.; E. Close, Hanson-Van Winkle-Munning Co.; P. H. Meyer, president of General Office Supplies Co.; and Ben Itkin, president of Itkin Bros., Inc. Standing are Irving Tuttle, Hudson Pulp & Paper Co. (left); and Bob Rivera, American Smelting & Refining.



IT'S THE "WAVY" CONFIGURATION THAT GIVES YOU

GENERAL ELECTRIC POWER GROOVE* LAMPS YOUR BIGGEST BARGAIN IN FLUORESCENT LIGHTING

Of all the lamp manufacturers, only General Electric can mass-produce this unusual lamp that makes all other brands of fluorescent lamps take a back seat. It's the shape that gives the G-E POWER GROOVE Lamp the muscle to outshine any previous fluorescent. The double-dimple shape is completely functional—it bends the arc stream, makes it travel further, means you get more light from each lamp . . . so you need a less expensive lighting system to get the amount of light you want.

This exclusive, new lamp development is typical of the innovative performance leadership you get in **every** General Electric Lamp you buy. For more information, write General Electric Co., Large Lamp Department, Nela Park, Cleveland 12, Ohio.

SEE OTHER SIDE FOR TWO OTHER
MONEY-SAVING, NEW G-E LAMPS

LARGE LAMP DEPARTMENT

GENERAL  ELECTRIC

WHERE BRIGHT IDEAS BECOME BETTER LAMPS



YOU MORE LIGHT AT LESS COST!

CATHODE SHIELD improves anode action (reducing end loss) and collects tiny electrode particles that would otherwise land on glass wall, darkening end of tube. New G-E POWER GROOVE Lamp stays brighter—end-to-end—longer!

NEW CONFIGURATION makes arc stream travel in a wavy path; makes greater electric power available for producing light. You get the arc equivalent of a 9-foot lamp; and the longer the arc stream, the more efficient the lamp.

s-produce
mps take
the extra
shape is
ther. This
extensive,

ation and
you buy.
ept. C-06,

OTHER
LAMPS.



Mister Magoo says:

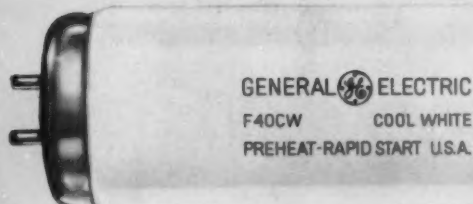
**"By George,
whoever
dreamed up
a light
like this?"**



If you now use 4-foot, 40-watt fluorescents,

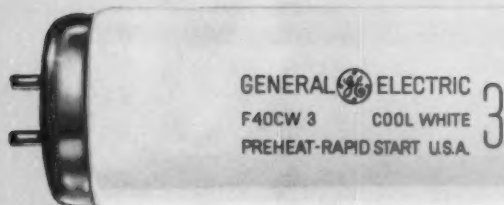


**HERE ARE TWO NEW GENERAL ELECTRIC LAMPS
WHICH GIVE YOU MORE LIGHT—AT LESS COST
—FROM YOUR PRESENT LIGHTING SYSTEM**



1 THE F40

The new, **universal** General Electric **F40** Fluorescent Lamp has already become the most popular 4-foot lamp on the market—all brands included. Get increased light output—2800 lumens—from the new G-E **F40** Lamp. You can operate it in either rapid start or starter-type circuits—thus reducing ordering, stocking, record-keeping, and storage, and simplifying maintenance if you use both types of lighting systems. Another plus feature . . . you'll find they list for 5¢ less than previous rapid start lamps.



2 THE PREMIUM 3

The dramatic, new G-E **PREMIUM 3** is your best bargain in 40-watt fluorescent light. It can deliver 11% more light than the new **F40**; and if your 40-watt lamps have been in a year or more, you get at least 30-55% more light than from the lamps you're replacing—**overnight!** The **PREMIUM 3** is the first 40-watt fluorescent to crash through the 3000-lumen barrier—designed to deliver 3100 lumens in the cool white color. It's priced slightly higher than the **F40** (\$1.45 list)—but will give you lowest cost of light in a 4-foot, 40-watt fluorescent lighting system.

See other side for your best
fluorescent buy for new lighting—
G-E POWER GROOVE LAMPS!

Progress Is Our Most Important Product

GENERAL  ELECTRIC

WHERE BRIGHT IDEAS BECOME BETTER LAMPS

TOMORROW'S METAL TODAY!



**FOR HIGH SPEED
FINISH MACHINING ON
ALL TYPES OF STEEL!**

V-R proudly announces a new tungsten-free cutting tool material, VR-65 . . . the first of a series.

VR-65 meets industry's demand for a material that extends the range of conventional cemented carbides.

VR-65, a high titanium carbide, has high hardness and fine grain structure to provide excellent crater resistance and high resistance to edge wear.

VR-65 has been field tested for over 1½ years. Users report: EXCELLENT. BETTER THAN HOPED FOR.

VR-65 can be brazed to steel shanks and can be ground by conventional methods.

VR-65 stocked for immediate shipment, in precision ground negative rake throw-away inserts. Blanks, tools and other inserts also available.

VR-65 literature is available — write today or see your V-R representative.



CREATING THE METALS THAT SHAPE THE FUTURE

VASCOLOY-RAMET

868 MARKET STREET • WAUKEGAN, ILLINOIS

C-776

MARCH 14, 1960

For More Information Write No. 279 on Inquiry Card—Page 32

183



Association News

Through the eye of PURCHASING'S Camera



CLEVELAND—The men shown here each have the same two significant accomplishments to their credit: purchasing executive at Alcoa and presidency of the National Association of Purchasing Agents. They are (left to right): Ralph Keefer, T. O. English (current president), and Tom Jolly.



MILWAUKEE—Officials of the Milwaukee Association look over the N.A.P.A. constitution, which is under consideration for possible revision at the annual convention in Los Angeles. Seated (left to right) are: T. J. Ray, F. J. MacDougall (president of the association), and W. J. Mett. Standing are Frank Messar (left) and L. R. Jarvey.

NORTH JERSEY—New members were asked to "stand and be recognized" at a recent meeting of this rapidly growing association. Total membership has soared to 456.

Imports and '60 Outlook at New England

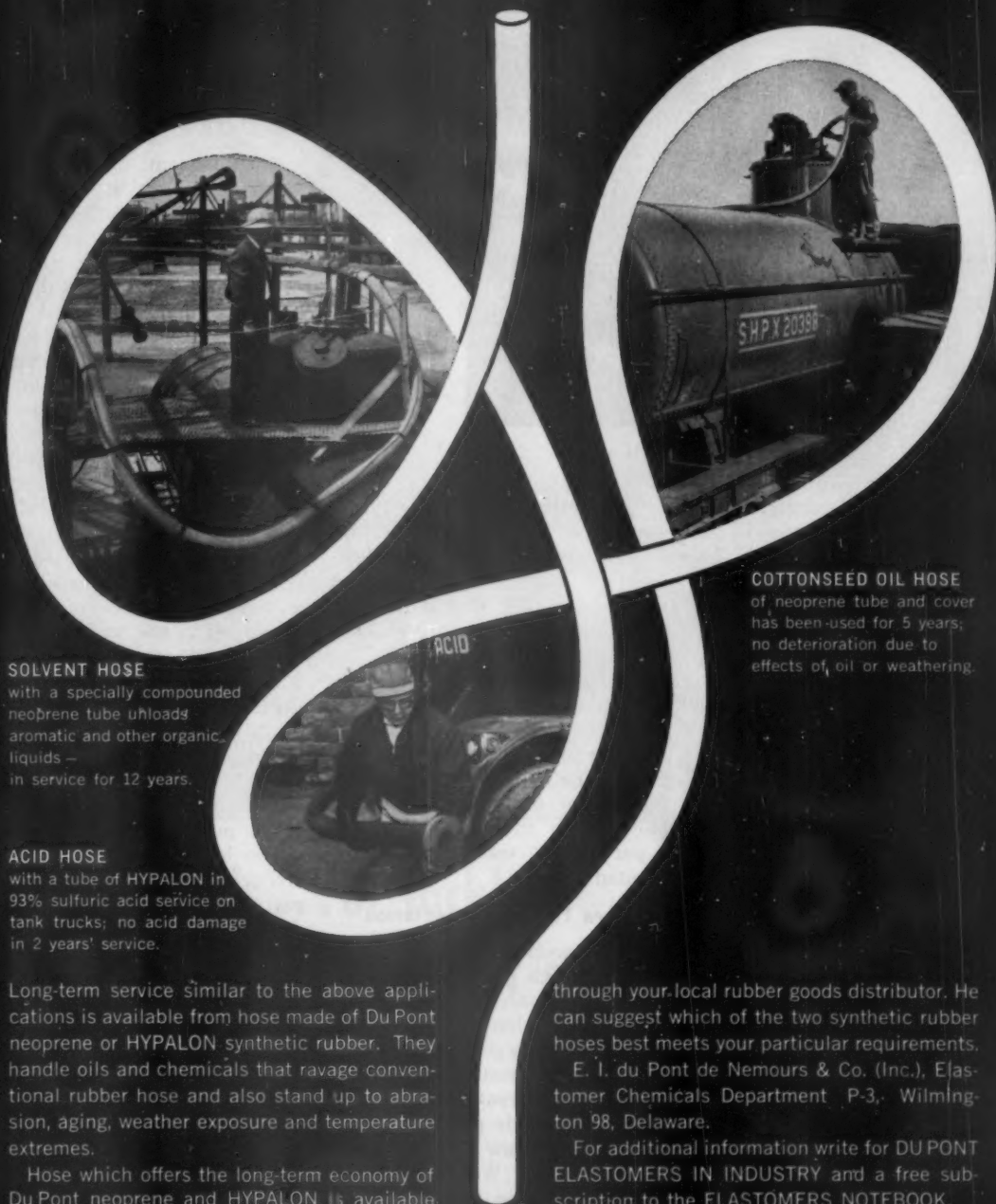


An attentive audience listened to four experts discuss the "Techniques of Buying Imports." The panel included: Austin B. Secor, Dewey & Almy; G. W. Murphy, Port of Boston; Fritz Koerner, Pistorino & Co.; and Julian Sobin, Irving M. Sobin Chemical Co.



David W. Sampson, vice president of McGill Commodity Service, spoke at a recent meeting on the subject "Dominating Economic Angles in 1960."

HOSE OF DUPONT NEOPRENE OR HYPALON JOB-TESTED TO TAKE TOUGHEST PUNISHMENT



SOLVENT HOSE

with a specially compounded neoprene tube unloads aromatic and other organic liquids — in service for 12 years.

ACID HOSE

with a tube of HYPALON in 93% sulfuric acid service on tank trucks; no acid damage in 2 years' service.

COTTONSEED OIL HOSE

of neoprene tube and cover has been used for 5 years; no deterioration due to effects of oil or weathering.

Long-term service similar to the above applications is available from hose made of DuPont neoprene or HYPALON synthetic rubber. They handle oils and chemicals that ravage conventional rubber hose and also stand up to abrasion, aging, weather exposure and temperature extremes.

Hose which offers the long-term economy of DuPont neoprene and HYPALON is available

through your local rubber goods distributor. He can suggest which of the two synthetic rubber hoses best meets your particular requirements.

E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department P-3, Wilmington 98, Delaware.

For additional information write for DU PONT ELASTOMERS IN INDUSTRY and a free subscription to the ELASTOMERS NOTEBOOK.



SYNTHETIC RUBBER

NEOPRENE HYPALON VITON ADIPRENE

Better Things for Better Living . . . through Chemistry

Dayton Group Told How To Measure Performance



Clifton E. Mack

A VETERAN purchasing executive recently took members of the Dayton Association to task for failing to decide on exactly what should be evaluated when measuring purchasing performance.

"There is," he said, "a tendency to discuss methods and procedures of the evaluation. While this is important, the policy determination must precede the 'how to do.'"

Twenty years purchasing experience as director of the Bureau of Federal Supply and as commissioner of the Federal Supply Service (GSA) in Washington added tremendous weight to these words of Clifton E. Mack.

A well-known figure in purchasing circles, Mr. Mack is now chairman of the logistics department at the Air Force Institute of Technology, Wright-Patterson Air Force Base.

"Evaluation of performance should be a two-way street," he admonished. "It is not solely a question of evaluation from the viewpoint of the supervisor or top management. It requires a clear understanding on the part of the employees as to what is expected of them individually.

"The employee should have some idea as to his opportunity to participate in the accomplishment of total objectives of the organization. He should be told just how he fits into the total effort.

"Unless this is done, the employee has no way of knowing whether he is doing a good job, a superior job, or whether he is just performing adequately. Too often the matter of bringing the employee into the organization as a part of the team is taken for granted.

Learn Through Association

"It is assumed that he will learn through association and it develops that an employee thinks he is doing what is wanted and emphasizing the goals which seem to him to be most important because what is really wanted has never been made clear to him."

Mr. Mack drew from his own experiences in Washington and proudly told the group that he talked with every new employee, to make certain they knew their responsibilities.

Evaluating purchasing performance is a difficult and important

job he told his fellow-association members. "It is a time consuming job if it is to be done right, with the end result being extremely important to both employee and the organization.

"The matter of reasonableness in determining a norm of performance to provide a sufficient time to do a quality job depending upon the nature of purchases all become important factors."

A Clear Determination

Six new members of the Dayton Association were in the audience to hear Mr. Mack lash out against using an evaluation program to develop factual information.

"Certainly it is true that factual information is basic to an evaluation. However, the facts are not the end result of the program. They provide the basis for the evaluation. A true evaluation program goes beyond the mere comparison or measurement of factual data and, in effect, interprets the data in terms of the value of the accomplishment.

"It is basic," he stressed, "that the starting point should be a clear determination of just what is wanted in the way of accomplishment. More specifically, when it is determined what is wanted the procedural aspects can be easily set out and a measurement established that can be analyzed and interpreted in providing good information for a fair evaluation of the purchasing department."

The logistics expert pulled an analogy out of the purchasing department to prove that statistical data is not adequate to appraise performance: "The determination as to whether a 'good buy' has been made requires an analysis of the intangibles and such an evaluation requires technical competence in order that what has been done can be fairly and impartially interpreted."

His audience listened attentively as he summarized his talk, "A carefully planned evaluation program is invaluable for management purposes. A mass of factual data that merely provides statistical comparisons has limited value."

For More Information about ad on facing page Write No. 281 on Inquiry Card—pg. 32→

PURCHASING



Boxes for tools...or tackle they're best when made of sheet steel

Strong, durable, easy to work, light in weight, low in cost—all these factors point to sheet steel as the ideal material for tackle and tool boxes. Whether you make or use such boxes, you can be sure they're best if they're made of sheet steel.

Bethlehem sheets—cold-rolled as well as Bethcon continuously galvanized—are used in the manufacture

of thousands and thousands of utility boxes. Other Bethlehem sheets go into automobile stampings, agricultural machinery, grain storage bins, metal furniture, tubing and, yes, baby carriages! We'll be glad to discuss your requirements.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL





Association News

Through the eye of PURCHASING'S Camera

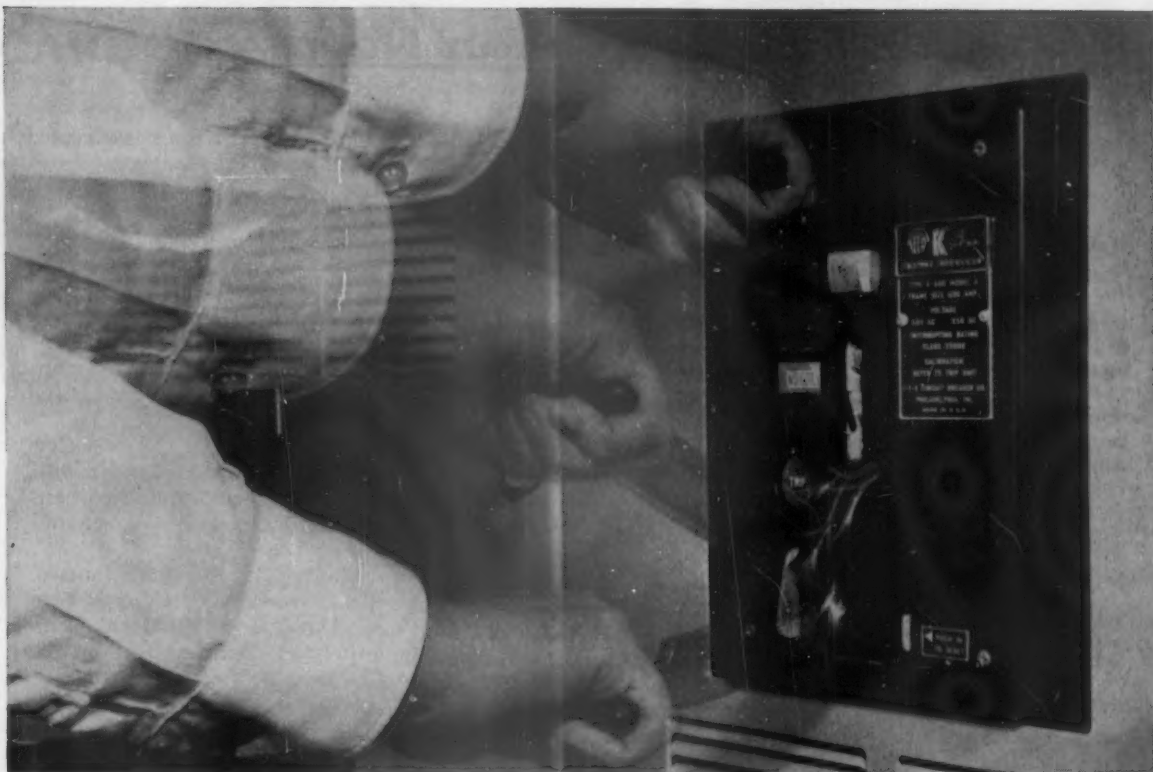
SOUTH BEND—Bill Veeck, president of the Chicago White Sox, was the principal speaker at a recent meeting of the South Bend Association. Awaiting his arrival are H. J. Baker (left), U. S. Rubber Co. and president of the Association and J. C. Adams, National-Standard Co.



NEW YORK—Albert L. Molowa, associate counsel of Revere Copper & Brass Co., led a discussion of legal clauses in the purchase order. The locale was an afternoon forum of the New York Association.



CHICAGO—Former presidents' night at the Chicago Association called for a special triple-tiered dais. President Jacob C. Frehner, Bowman Dairy Co., presented 25-year plaques to L. C. Issel, Roy Oliver, and E. E. Swick. Seated at the first level (fourth from the left) is National President T. O. English of Alcoa.



I-T-E started a revolution in 1957 when it introduced the completely new K-Line circuit breaker with stored energy closing. Today it is still the most advanced circuit breaker for low voltage switchgear you can buy.

ONLY I-T-E 600 V. SWITCHGEAR GOES BEYOND STORED ENERGY

**GIVES YOU
ADVANCES
NO OTHER
GEAR
OFFERS**



Closed door disconnect. A real safety feature. Operator can rack breaker out to either test or disconnect position without opening door. Prevents cluttered aisles from open doors and protruding breakers. And keeps breakers clean when they are disconnected.



Expanded range trip. I-T-E breakers can grow with your loads. Each trip device has roughly three to four times the range of conventional devices. Saves cost and downtime that replacement would demand. Easy to adjust. Calibrated directly in amperes.

You pay no more. That's right. With all these extra advances I-T-E low voltage switchgear costs no more. Send for detailed descriptive Bulletin 6004-C. I-T-E Circuit Breaker Company, Dept. SW, 1900 Hamilton St., Philadelphia 30, Pa.



I-T-E CIRCUIT BREAKER COMPANY



Manufacturers of
Cold Headed
Fasteners
Since 1888

Hubbell has the capacity to produce and deliver on time the finest quality standard or special fasteners in the quantity required up to a maximum diameter of $\frac{3}{4}$ ". This statement is backed by the facilities listed here and supported by over 70 years' experience in cold heading.

Each operation is quality controlled to insure high quality and precision.

Mass production is maintained without sacrificing accuracy or quality.

The use of our engineering service offers the ultimate in engineering know-how.

Prices and delivery on request. Simply send blueprint and/or sample of the item.

COLD
HEADING

SLOTTING

THREAD
ROLLING

TURNING
POINTING

DRILLING
TAPPING

PLATING
HEAT-
TREATING

QUALITY
CONTROL

**HARVEY HUBBELL,
INCORPORATED**

Machine Screw Dept. Bridgeport 2, Conn.

For More Information Write No. 283
on Inquiry Card—Page 32

Association News

Use of Nuclear Energy Highlight at Rochester

"Atomic Power—Today and Tomorrow" was the subject of Alfred Dowd, Rochester Gas and Electric Corp., when he recently addressed the Purchasing Agents Association of Rochester.

Pointing out man's tremendous strides in the past one hundred years, Mr. Dowd went on to predict increasing scientific achievements in the years to come.

By making a comparison to existing world fuel resources and potential population growth, he brought home the importance of developing other sources of BTU energy supply. "Because of limitations on natural reserves, a logical place to start would be the development of nuclear power fuel," Mr. Dowd pointed out.

He stressed that many of these complicated problems are being solved. In fact, there are already four nuclear plants in operation, and twelve other projects in various stages of planning or construction.

N.A.P.A. Appointment

N.A.P.A. President T. O. English has announced the appointment of Charles T. Haffey, Charles Pfizer & Co., Inc., Brooklyn, New York, as chairman of the National Committee on Fuel Oil.

Mr. Haffey replaces Frank J. D'Antonio, who is retiring.

General Chairman Harlan E. Cross, of the Committee on Value Analysis-Standardization, has announced the formation of a Development Committee on Standardization.

Duncan Gregg, Kaiser Aluminum and Chemical Corp., Oakland, California, has been named chairman of this new Development Committee.

K. A. Cruise, Bendix Aviation Corporation, Kansas City, Missouri, has been appointed vice chairman of the Value Analysis-Standardization Committee, succeeding E. P. Kron.

In resigning his post as vice

chairman, Mr. Kron has accepted the position of chairman of the Visual Aid Development Subcommittee of the Value Analysis-Standardization Committee.

General Chairman Harold A. Berry, of the Committee for Professional Development, has announced the formation of a new project committee to revise the "Outline of a Course in Industrial Procurement."

Henry R. Michel, Celanese Corporation of America, Charlotte, N.C., has been appointed chairman of this new project committee.

Wayne A. Rodman, Jantzen, Inc., Portland, Oregon, has been appointed to the National Committee on Textiles by National Chairman F. Victor Hanaway.

Mr. Rodman will report on synthetic textiles for the bi-monthly Textile Market report.

John F. Brennan, Hugh J. Baker and Company, Indianapolis, Indiana, has been appointed a member of the National Committee on Steel by National Chairman A. G. Ruediger.

Mr. Brennan will replace J. W. Ruff who has resigned.

Orrin E. O'Connor, Quaker State Oil Refining Corporation, Oil City, Pa., has been appointed to the National Committee on Containers by National Chairman G. R. Smith.

E. O. Haymond, chairman of the National Committee on Public Relations, has announced the following appointments:

District No. 2—vice chairman: Edwin Ruthven, Jr., Republic National Bank of Dallas.

District No. 9—chairman: Daniel J. Lewis, The Christian Science Publishing Society.

L. S. Clark, chairman of the National Committee on Lumber, has announced the following appointment: *associate regional chairman—Northeastern States:* Bernard R. Lauer, Blaw-Knox Company.

Mr. Lauer will serve with W. B. Lambert, as associate chairman, under Regional Chairman William P. Carroll, Jr.

CARBON AND ALLOY STEEL INVENTORIES...



They can and will—if you let *Frasse* stocks be your inventory! Your cost for steel ready for use will be less. You'll save the cost of labor, handling, processing and obsolescence...free plant space and idle capital for profitable use. You incur no expense until material is needed...then only the cost of steel—not the purchase price PLUS the high cost of possession.

With Frasse stocks as your inventory, you can pick from 20 different grades—any one of 2001 sizes. For, Frasse carries a complete range of carbon bars and shafting as well as commercial and aircraft quality alloys. There's always a size and grade for any application...*immediately available.*

Weigh the advantages of this modern solution to steel inventory problems. You get broad selection, fast deliveries—and the help of specialists that offer a wealth of technical information and problem-solving techniques. Place future orders for the carbon and alloy bars you need with Frasse—*your* Steel Service Center. You'll find it convenient...and far more economical than maintaining your own inventory.

Peter A.



& Co., Inc.

New York 13, N. Y.
17 Grand St.
Walker 5-2200

Philadelphia 29, Pa.
3911 Wissahickon Ave.
Baldwin 9-9900

Buffalo 7, N. Y.
P. O. Box K, Sta. B
BEDford 4700

Syracuse 1, N. Y.
P. O. Box 1267
HOWard 3-8655

Hartford 1, Conn.
P. O. Box 1949
JACKson 9-6861

MARCH 14, 1960

For More Information Write No. 284 on Inquiry Card—Page 32

Call **FRASSE 1st**
for

COMPLETE

**CARBON AND
ALLOY STEEL
SERVICE**

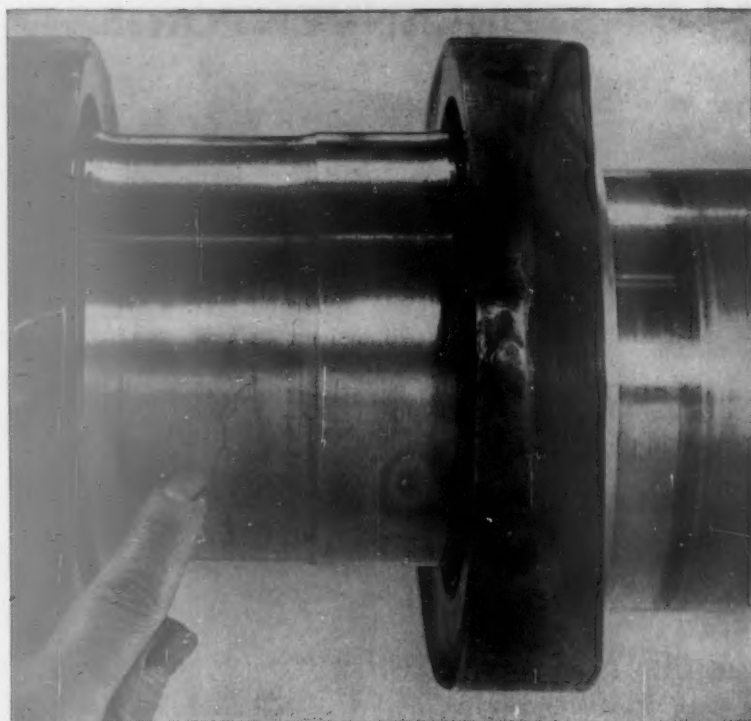
Frasse Carbon and Alloy
Stocks Include:

C1018	C1137	E9310
C1045	C1212	E4130
B1112	C1213	4140
B1113	Ledloy	4142
B1113X	4615	E4340
C1117	8620	E8740
4140 H.T. • 4142 H.T.		

Precision Shafting • Special Finish
Turned & Polished Shafting • Drill Rod
4130 Aircraft Quality Sheets



YOUR STEEL
SERVICE CENTER

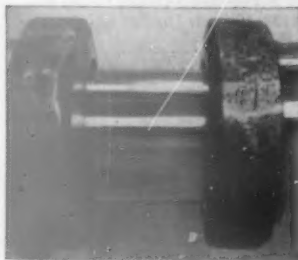


THIS CRANKSHAFT JOB NEEDS A SPECIALIST

This is specialized work, rebuilding crankshafts—intricate, exacting, and naturally expensive. It's the kind of work that demands a specialist . . . and we are just that!

We've specialized in rebuilding crankshafts, because since 1916 we've *made* crankshafts. And who knows better than a maker what are the "musts" of a sound, economical repair job. We'll take your worn crankshaft and rebuild it, if salvagable, through the carefully controlled steps of grit blasting, replating, regrounding and thorough inspection. And we'll deliver it back with a guarantee for 100% performance that only a manufacturer-specialist can provide. May we quote on your next job?

For more details on crankshaft repair write for Bulletin RC-3



This is a finished, repaired crankshaft, after processing by National Forge.



**NATIONAL
FORGE** COMPANY

For More Information Write No. 285 on Inquiry Card—Page 32

Book Reviews

Creative Communications

By Edgar A. Herrman

The SoundScriber Corporation
North Haven, Conn. **\$2.50**

Executive duties cannot be fulfilled without the aid of communications. It may take the form of public speaking, letter writing, management reports or policy conferences. The purchasing agent is one of the few executives who moves entirely in a sphere of communications. This 83-page manual should prove to be a big help to him. It was prepared by the education department of Sound Scriber in cooperation with specialists in the field of business and education. Creative Communications was written to provide management with a better way to improve written communications, either through formal training courses or individual self-help programs. The manual should not, however, be limited to classroom use. A "straight-through" reading will give purchasing agents many new ideas and refresh those which they've heard before. Some of the topics covered are: How to Achieve Creativity in Communications; Five Principal Elements of Good Composition; and What of the Secretary's Importance? An instructor's manual is also included for those wishing to use it as part of a regular training program.

Ingenious Mathematical Problems and Methods

By Richard A. Graham

Dover Publications Inc. **\$1.45**

The author of this book is founder of Graham Transmission Inc., Menomonee Falls, Wis. In his house organ, "The Graham Dial" he has been publishing mathematical puzzles that have delighted the company's customers and friends for years. Because of popular demand, the puzzles are now available in book form. They're excellent therapy for tired P. A.'s who want to get their minds away from their jobs for a few minutes.

Presenting New MARSH "Master-Test" SERIES of extremely accurate test gauges



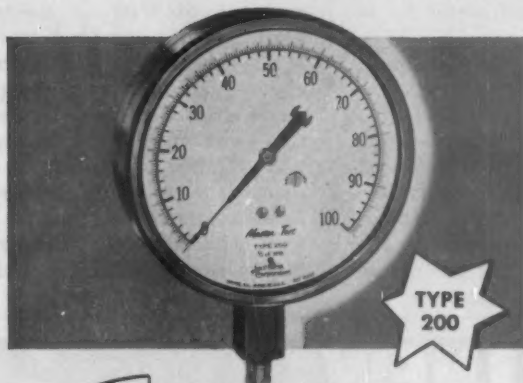
Crowning achievement in instrument making...this superb series of test gauges developed to meet today's exacting requirements of instrument men throughout industry. Accuracy and dependability beyond compare...each gauge individually dead-weight tested (think what that means!)...each gauge guaranteed accurate within $\frac{1}{4}$ of 1% plus or minus of the maximum dial reading over the entire range.

To provide reading accuracy in keeping with the accuracy of the instrument, all "Master-test" gauges have the

simplified "Read-easy" dial (patent pending) illustrated opposite—a dial that can be read with the accuracy of a caliper, yet with the ease of a clock.

To further increase accuracy, three advanced means of reading have been developed as described below: the "twin-tip" pointer; the mirror path; the non-parallax dial.

"Master-test" gauges are available in sizes $4\frac{1}{2}$ ", 6", 8"...in all standard ranges from 0-15 to 0-30,000 psi...in vacuum and compound types...in a full range of case patterns. Ask for 20 page bulletin.



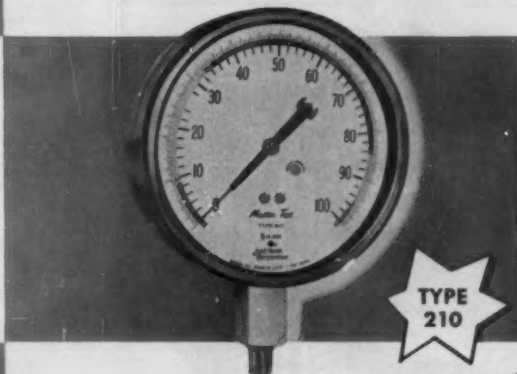
← with "Twin-tip" pointer

The most common error in reading pressure occurs when the observer reads from an angle rather than "dead on". This Marsh "Twin-tip" pointer enables the operator to know when he is dead on by lining up the two tips so that only one is visible. The twin-point arrangement is similar to the sights on a rifle.



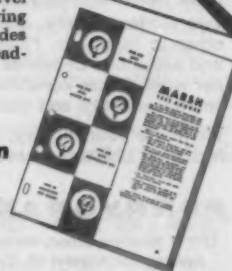
with mirror dial →

Another method of insuring accurate "dead on" reading. Knife edge pointer is reflected by the mirror path. When reflection is not seen, reading is dead on and true. The ease and accuracy with which the mirror dial may be read cannot be duplicated by any other mirror type dial. It is the combining of the mirror path with the exclusive Marsh "Read-easy" dial that makes this faster, error-free reading possible.



← with "Non-parallax" dial

This Marsh development eliminates mistakes in dial reading even if read at an angle. To accomplish it Marsh engineers designed a clear Plexiglas insert placed, as shown, over the fine graduations so that they appear to be at the same level as the pointer regardless of the viewing angle. The "Non-parallax" dial provides the easiest and most accurate dial reading available.



Ask for this
20 Page Bulletin

MARSH

THE STANDARD OF ACCURACY

MARSH INSTRUMENT COMPANY, Dept G, Skokie, Ill.
Division of Colorado Oil and Gas Corporation • Marsh Instrument
& Valve Co., (Canada) Ltd. 8307 103rd St., Edmonton, Alberta,
Houston Branch Plant, 1121 Rothwell St., Sect. 15, Houston, Texas

For More Information Write No. 286 on Inquiry Card—Page 32

MARCH 14, 1960

193

More Transportation Competition

(Continued from page 87)

allowed to give the rate and service policies necessary for such movements. The basic force bringing about this division in function in transportation is private enterprise, competition, and alertness to business opportunity. Public policy must act within the context of these basic principles."

Government has a dual interest in transportation. First is the question of public interest. In this regard the Administration has held competition as the goal.

A second consideration is the fact that government is the largest single user of transportation—and the biggest investor in transportation facilities. It is difficult to apportion the exact costs of transportation to end products, but a rough projection of the costs of transportation to the government includes such charges as \$600 million for freight paid out each year by the Department of Defense alone. The Defense De-

partment estimates that in the freight charges. The military budget includes \$110 million for passenger travel.

The Post Office Department spends close to a third of a billion dollars a year on transportation. Our air program costs the government in the neighborhood of a billion dollars a year. We are spending about \$2 billion a year on all our water resources, and a respectable portion of this sum goes for transportation. To top all these figures, the annual federal government investment in roads is roughly \$2.7 billion a year.

In this as a buyer of, and an investor in transportation, the Administration feels that its interests can be served better by increased competition.

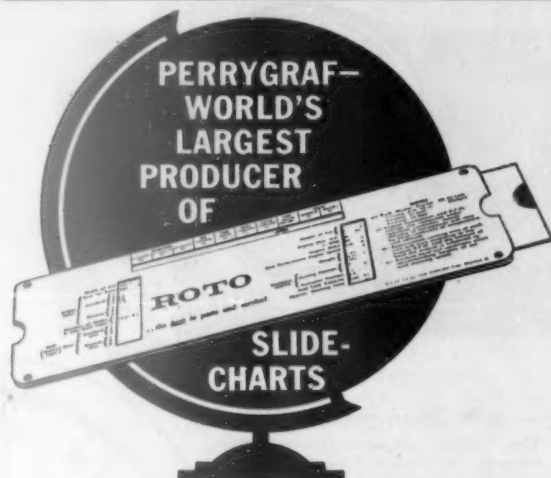
While the central theme of the Department of Commerce transportation study is a lessening of regulation, the scope of the study is much wider. It includes investment policies of the transportation industry, tax problems, labor-management relations, and the complex system of employee-benefits in transportation.

As to the impact of the study, no immediate outcome is likely. Some of the recommendations can be accomplished by administrative action, others by legislation.

On the prospects of legislative enactments during the current Congress, it is quite clear that it is very late in the session for any new legislation so heavily tinged with controversy. This is especially true in a session that is more closely attuned to the forthcoming elections than to broad general problems that have no immediacy.

What, then, is the significance of the Commerce study? It lays down substantial guidelines in policy and clearly signals that economic conditions in the transportation industry have changed.

The present Administration chooses as its solution to the problem a greater degree of competition—a sharp reduction in regulation. If the Administration that succeeds President Eisenhower holds this same view, then a head start will have been made in reducing regulation of the complex transportation industry. ► END



Two hundred million since 1932! More Slide-Charts for more people than any other company in the world.

Two Modern Plants, one geared to runs of millions, the other to hundreds. Finest facilities for accurate printing and assembly. Deliveries as high (in a pinch) as a million per week. Prices consistent with quality work and dependent on quantity and materials from pennies to dollars.

We invite your inquiry. Send for free full color booklet including 122 actual case histories.

PERRYGRAF CORPORATION

1500-I Madison Street, Maywood, Illinois 150-I South Barrington Avenue, Los Angeles 49, Calif. Sales Offices in Principal Cities

For More Information Write No. 287 on Inquiry Card—Page 32

NEW "42,000 series" Stearnetic DISC BRAKES



* Stearnetic — Stearns exclusive unitized, electro-magnetic operating mechanism.

- Up to 33% shorter
- Up to 50% lighter
- Max. torque 125 to 575 lb ft
- AC or DC—all single phase — only 2 lead wires
- For standard or straight-thru shafts
- Standard motor or floor mounting — two styles of enclosure
- Exclusive Stearns 1-point adjustment for wear
- Variable torque to match application

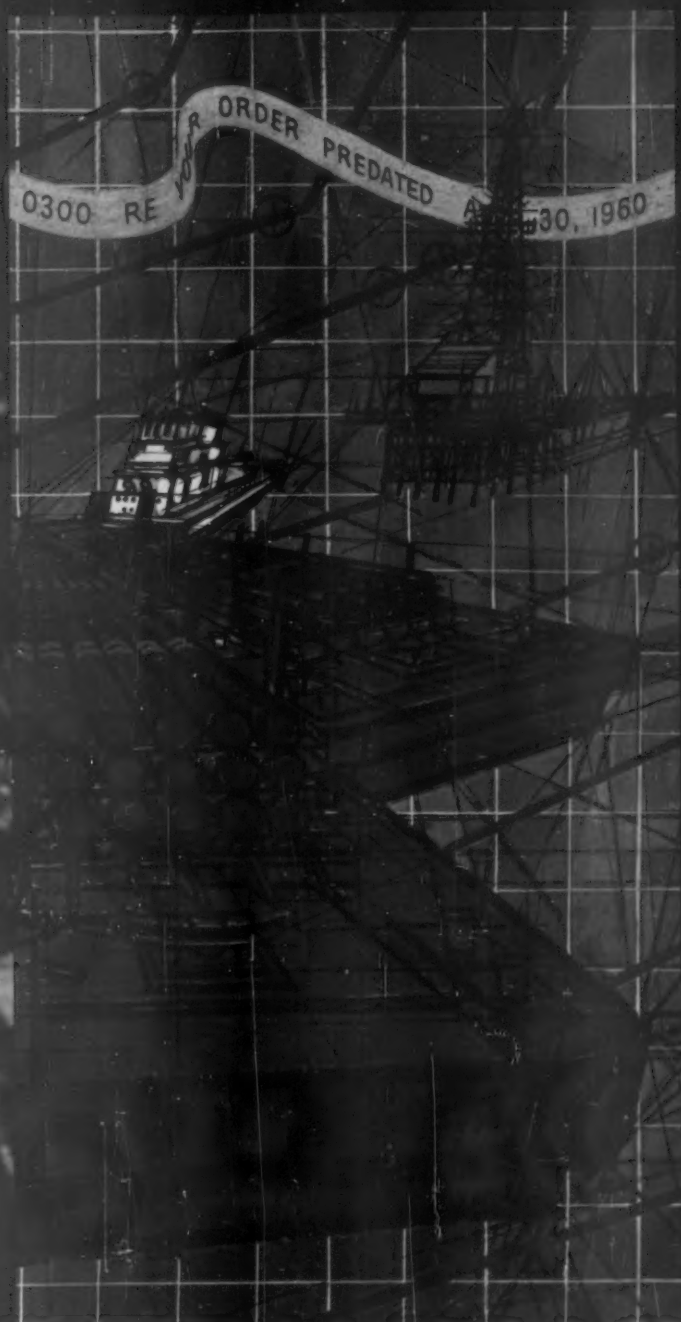
Send for Special Information Sheet No. 2 T



Stearns ELECTRIC CORPORATION
120 NORTH BROADWAY
MILWAUKEE 2, WISCONSIN
Phone: BRoadway 2-1100

For More Information Write No. 288 on Inquiry Card—Page 32
For More Information about ad on facing page Write No. 289 on Inquiry Card—pg. 32→

PURCHASING



STEEL SERVICE

STEEL is tension on the charging floor as molten iron begins to pour. It is a "heat" of 200 tons of fiery metal ladled into glowing ingot molds. From 41 Open Hearths of Youngstown comes the basic steel you need. High quality steel that is pierced, rolled, pressed and formed into tubular goods, sheet, bar, rod, tinplate and alloy steels. Steel for cars, for toys. For tractors, for pipelines. Steel from the expanding and integrated organization that marks Youngstown today as the growing force in steel.

YOUNGSTOWN is steel plus service. It is Orange Band pipe plus the largest engineering staff in the oil patch to help you use it. It is well casing complete with string charts. It is on time delivery. It is 16 distributors and our giant oil field supply division, Continental Emsco. It is physical quality that only the eyes of old hands in Youngstown mills can measure. Chemical quality that expert metallurgists provide. Youngstown service is another user benefit you'd expect from the growing force in steel.



Youngstown - growing force in steel

THE YOUNGSTOWN SHEET AND TUBE COMPANY, YOUNGSTOWN, OHIO. ATLANTA BOSTON BUFFALO CHICAGO CINCINNATI CLEVELAND COLUMBUS DALLAS DENVER DES MOINES DETROIT GRAND RAPIDS HOUSTON INDIANAPOLIS KANSAS CITY LOS ANGELES MILWAUKEE MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH ST. LOUIS SAN FRANCISCO SEATTLE TULSA WASHINGTON

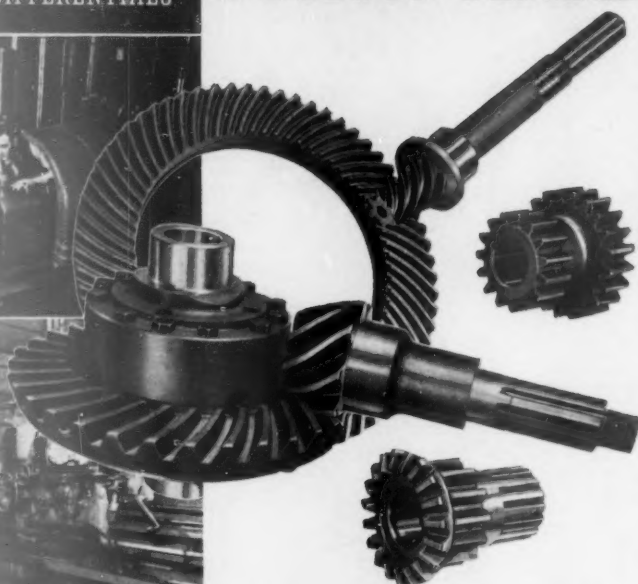
GEARS

and DIFFERENTIALS



Ask for interesting, illustrated bulletin.

Your
made to order
by
FAIRFIELD



A Plus Value IN ANY PRODUCT!

Simple arithmetic explains why, TODAY, many of America's leading machine makers no longer undertake to solve the problems involved in production of gears, differentials, and specially designed gear parts. For them, FAIRFIELD IS THE ANSWER!

Every facility is available at Fairfield—latest, cost-cutting, ultra-modern metal-working and heat treating equipment, kept busy by volume production, *plus* expert engineering counsel. This makes for economy and efficiency that can benefit YOU.

Check with Fairfield NOW on your gear production schedules. As one of the nation's largest independent producers, Fairfield can usually give you quickest service available and handle any production requirement. *Become a Fairfield customer; it pays!* CALL OR WRITE.

FAIRFIELD

MANUFACTURING COMPANY, INC.

2321 South Concord Rd. Lafayette, Indiana

TELEPHONE: Sherwood 2-7353



Made to Order for:

TRACTORS • HEAVY DUTY TRUCKS • AGRICULTURAL MACHINERY • POWER SHOVELS AND CRANES
MINING MACHINES • ROAD GRADERS • BUSES • STREET SWEEPERS • INDUSTRIAL LIFT TRUCKS

For More Information Write No. 290 on Inquiry Card—Page 32

Traffic Tips For Small Company P.A.

(Continued from page 79)

Shippers associations consolidate both inbound and outbound freight for their members to take advantage of large volume rates on both road and rail. These associations are similar to freight forwarders, but operate strictly on a cost basis for the benefit of their members.

The 1960's will see many changes in transportation patterns. Jet cargo aircraft will become commonplace and make it possible to ship goods from New York to Los Angeles in six hours or less. Railroad freight cars will be put on fast passenger schedules, with more but shorter trains shuttling across the country. More tandem trucks—one tractor pulling two trailers—will be used, especially on turnpikes and thruways. "Piggy-back", "fishy-back", "birdy-back", and "reefer" services will become more popular.

Purchasing agents should take advantage of these changes in the world of transportation. Ask your suppliers, railroads, and trucking companies for help. They'll be glad to give it. Know what the rates and classifications are in your area—and make sure that you're getting the most for your transportation dollar. ► END

In the March 28 Issue
of
PURCHASING MAGAZINE

**Purchasing
and
Payola**

**How to Fight
Foreign Competition**

**How to Control
Inventories**

Don't Miss This Issue

For More Information about ad on facing
page Write No. 291 on Inquiry Card—pg. 32→
PURCHASING




YOU SAVE ON INSTALLATION AND ASSEMBLY WHEN YOUR "SPECS" READ HYATT

Because it saves assembly time, Hyatt makes all separable races interchangeable. You can press a race on the shaft at one work station . . . join it to any assembly of the same part number at a later stage of production. As a result, you save time and cost when you specify Hyatt Hy-Roll Bearings. Hyatt Bearing Division, General Motors Corporation, Harrison, N.J.

Replacement bearings available through United Motors System and its authorized bearing distributors.

HYATT *HY-ROLL BEARINGS*

IN ROLLER BEARINGS HYATT IS THE WORD FOR  RELIABILITY

When he asks about switches...





...steer him toward precision!

Precision is satisfaction. And, no switch manufacturer safeguards precision like MICRO SWITCH.

Every inch of beryllium copper is measured for its exact thickness before it can become a famous MICRO SWITCH snap-action spring. Only MICRO SWITCH exhaustively tests every order of vital silver contacts before they enter production channels. In the largest test laboratory of its kind, your switches undergo thorough tests that exactly duplicate the environment and operating conditions under which they must work in your plant or on your product. Many other exclusive quality checks safeguard MICRO SWITCH precision and reliability.

There's reassurance in recommending MICRO SWITCH to your engineering and production men. As the most complete source for small snap-action and mercury switches, MICRO SWITCH has designed over 12,000 different precision switch types. Next time they ask about a switch source, steer them toward MICRO SWITCH precision—and satisfaction!

Switches cut costs with automatic control— let MICRO SWITCH help!

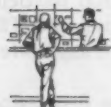
When you need information on switches, you'll find MICRO SWITCH *easily* the most helpful source. A nationwide network of field offices puts engineering counsel near you to save valuable time.



Call on the nearby Branch Office. Check the Yellow Pages for the location of the nearby MICRO SWITCH Branch Office. Ask about limit switches for cost-cutting automatic control in your production machinery or new switch ideas for your product.



Largest switch stock available. MICRO SWITCH carries hundreds of different switch types in stock and hundreds of others are readily available. If necessary, special switches may be designed to exactly match your requirements.



Nearby distributors simplify replacement. There is a MICRO SWITCH Distributor close to your plant. He provides regular switch service and can avoid downtime when replacements are needed by shipping from his own stock.



Helpful Catalogs for your file. Complete catalogs are available covering the various switch categories shown on this page. Write for your free copies to bring your file up to date on the types you buy most regularly.

MICRO SWITCH . . . FREEPORT, ILLINOIS

A division of Honeywell

In Canada: Honeywell Controls Limited, Toronto 17, Ontario



Honeywell

MICRO SWITCH Precision Switches

For More Information Write No. 292 on Inquiry Card—Page 32



"Plug-In Limit" Switches



Subminiatures
and Sub-Subminiatures



Enclosed Industrial Switches



Mercury Switches



Small Basic Switches



Explosion-Proof Switches



Pushbutton Switches

it's Jewel Bright
takes tough twists without
FLAKING, POWDERING, or PEELING

CONTINENTAL®
Brytite®
A PATENTED GALVANIZING PROCESS

CHAIN QUALITY WIRE

The Zinc Coated Wire with the Plated Look

Brytite Wire is so shiny bright and satin smooth that electroplating and special finishing operations are not needed—a valuable saving in labor and materials! The coating is so tight that it withstands severe deformation of the base metal—takes hard turns and twists without flaking, powdering, or peeling.

In Many Sizes, Finishes, Tempers and Analyses Specify BRYTITE in Satin Finish, Unwiped, or redrawn (in certain sizes) . . . in various tempers and analyses in low carbon and medium low carbon steels . . . for quality weldless or twisted wire chain, or wherever long-lasting brightness is desired. Special shapes, too.

Free Manual of Continental Manufacturers' Wire. Contains details of BRYTITE and other types of Continental Wire. Write for copy.

Fine Finishes in Manufacturers' Wire

CONTINENTAL STEEL
CORPORATION—KOKOMO, INDIANA

PRODUCERS OF: Manufacturers' Wire in many sizes, tempers and finishes, including Galvanized, KOKOTE, Flame Sealed, Coppered, Tinned, BRYTITE, Annealed, Liquor-Finished, Bright, and Special Shaped Wire. Also Reinforcing and Galvanized Fabric, Nails, Continental Chain Link Fence, and other products.

For More Information Write No. 293 on Inquiry Card—Page 32



How To Figure Freight Charges

(Continued from page 85)

cause of the distance of the plant from the airport. Air express and air freight forwarders have a free delivery zone, with a charge for anything delivered outside of that zone. Other methods of shipment (except parcel post) may also make such a delivery charge. If so, significant savings may be made by having freight held at the agency's office and picked up by your truck. In this case, instruct vendors to mark shipments "Hold at (your city or airport) for (your company's name) pick-up."

If there is a delivery charge (and you won't pick up the material at the carrier's office) add this charge into the figure shown. Also, when vendors ship FOB, make sure that you have added the pickup fee into the rate.

To be convenient, eliminate the necessity for the buyer to make additions and subtractions from the rates shown. This is not a substitute for the necessity of consulting a rate book when making a shipment; it is merely a tool for the buyer when he specifies the method of shipment that should be used.

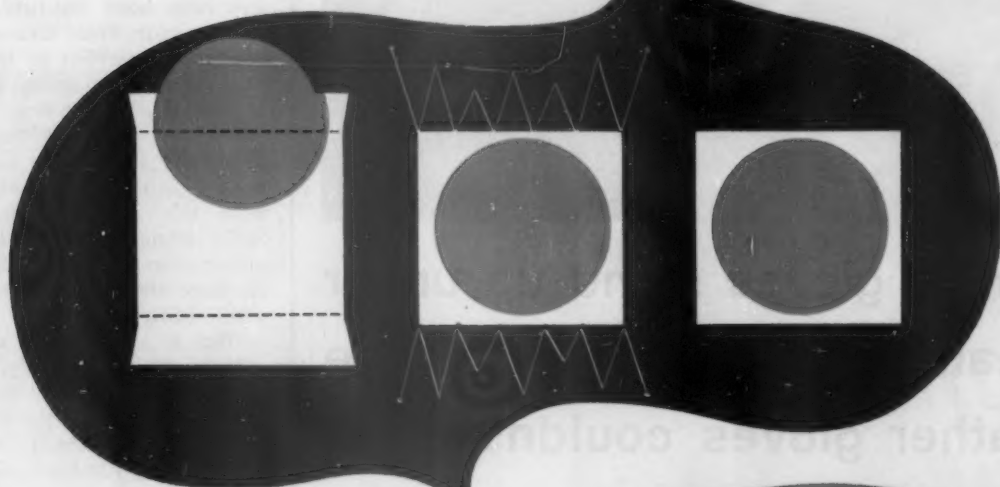
General Instructions on the Method of Shipment. As either a preface or appendix to the set of tables, there is a need for general explanation of the various methods of shipment. A separate page for each general classification is most useful. This should be a general exposition of (1) the use that can be made of that particular method of shipment, and (2) the restrictions that are associated with the method.

For example, in the discussion of parcel post, explain that the country is set up in zones, with limits on the weight that can be shipped from one zone to another. Also, note that it is almost impossible to trace regular parcel post, and that if this factor is important, it may be better to use express. Point out the distinction between "parcel post special handling", and "parcel post special delivery". Very often it is a waste

(Please turn to page 202)

PACK IT

WITH RADIO WAVES



CCA's new Di-Electric Sealer positively seals cartons by the heating action of radio waves on cold glue... High-frequency waves eliminate de-waxing necessary with conventional sealing methods—and unwieldy overwraps. Provides fast, smooth production, plus protection and merchandising advantages. To pack it—move it—sell it is the business of CCA packaging. For details...



CONTAINER CORPORATION OF AMERICA

Visit us in Booth No. 1, Conrad Hilton Hotel, Chicago, March 6-10

Chicago 3...and all key marketing areas. Folding Cartons, Shipping Containers, Sefton Fibre Cans, Molded Plastic Products

MARCH 14, 1960

For More Information Write No. 294 on Inquiry Card—Page 32

201



Jomac gloves stand up under treatment that even expensive leather gloves couldn't take!

The test shown above, in which a razor blade is drawn sharply across a Jomac glove without ill effect, shows the remarkable cut resistance of Jomac's loop-pile fabric . . . *protection that even leather doesn't afford.*

Moreover, Jomac gloves *wear longer* than leather gloves and provide a *better grip* on oily surfaces. And most Jomacs—like the HR gloves shown above—are reversible . . . so any two make a pair, any pair gives you four working surfaces.

Write today for free literature. Describe working conditions and materials handled: we'll make specific recommendations.

Jomac also makes a complete line
of North PVC-coated gloves

JOMAC

INDUSTRIAL GLOVES

JOMAC INC., DEPT. F, PHILADELPHIA 38, PA.

For More Information Write No. 295 on Inquiry Card—Page 32

202

How To Figure Freight Charges

(Continued from page 200)

of money to use special delivery, particularly if your plant receives early or frequent deliveries from the post office. One buyer occasionally makes adroit use of special delivery, however. When a shipment is made on Friday, and is needed Monday morning at 8 o'clock sharp, he has the package sent to his home where it is received on Saturday or Sunday.

Service has become a virtual by-word with common carriers today, and inquiry will bring out the numerous "extras" that are being offered. Many of these services have been instituted within the last year. Point them out. The one you leave out as being too common-place may be unknown to one of your buyers.

Use and Form of the Guide. The most appropriate form is a 5 by 7 inch medium weight card with tab. Bind the individual cards along the top edge with either rings or with a spiral wire. Arrange the shipping points alphabetically and stagger the tabs so that at least six are visible.

Make the guide handy. Make a copy for each buyer. Encourage him to keep it near the telephone for ready reference. In this way he can easily flip his guide to the proper page.

Conclusions — The "Buyer's Guide to Freight Charges" is intended as a tool for the buyer's use. It is not an end in itself. Men who have been buying for many years, when shown the guide, remarked that they picked up quite a few suggestions. Many startling facts will be uncovered when a guide is prepared. For example, we found that there was only a difference of about 50¢ in the shipping charge for 100 pounds from Minneapolis to Washington, D. C., between the rail express and the airline air freight charge. Also, it is somewhat surprising to see the variation in rates on cross country shipments.

The buyer who makes use of this guide will not only eliminate a great deal of guesswork but will also reduce his company's freight bill considerably. ► END

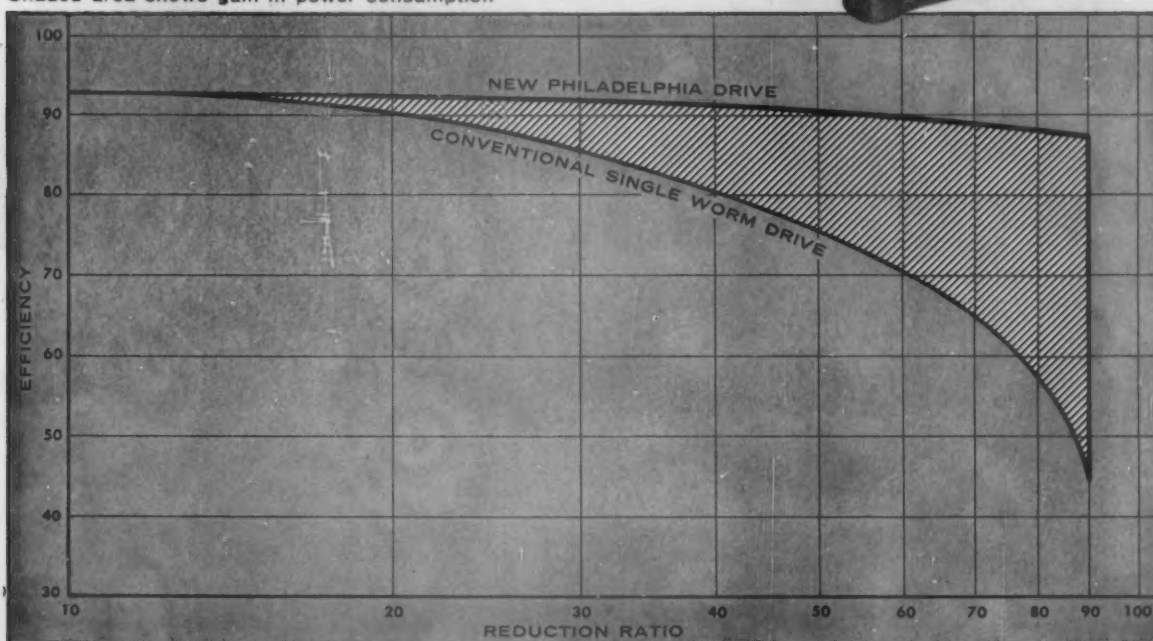
PURCHASING

NEW...from Philadelphia Gear



Now you can get increased efficiency in worm gear drives—see curve. Helical attachments for double and triple reduction units combine the efficiency advantage of helical gearing with the high ratio advantage of worm gearing. You save on power consumption . . . high operating temperatures will never be a problem.

Shaded area shows gain in power consumption



New flexibility. One basic housing design plus standardized mounting bases, gearing, helical attachments and torque control attachments permit fast assembly from stock. You can get *any* drive arrangement, *any* mounting arrangement, in the exact size and ratio to meet your specific requirements. Torque control attachments for all sizes are available from stock for applications demanding overload protection.

New high capacity. This is not just a re-rated line. Improved tooth forms, precision ground alloy steel worms, special high strength bronze gears, sturdy housings, helical attachments with ground gearing . . . all mean higher capacity in less space. In fact, you get space savings to 50% . . . weight savings to 60%. Ratios from $5\frac{1}{2}$: 1 to 1212: 1. Center distances from 3" to 21". Write for catalog data today.

philadelphia gear drives

PHILADELPHIA GEAR CORPORATION

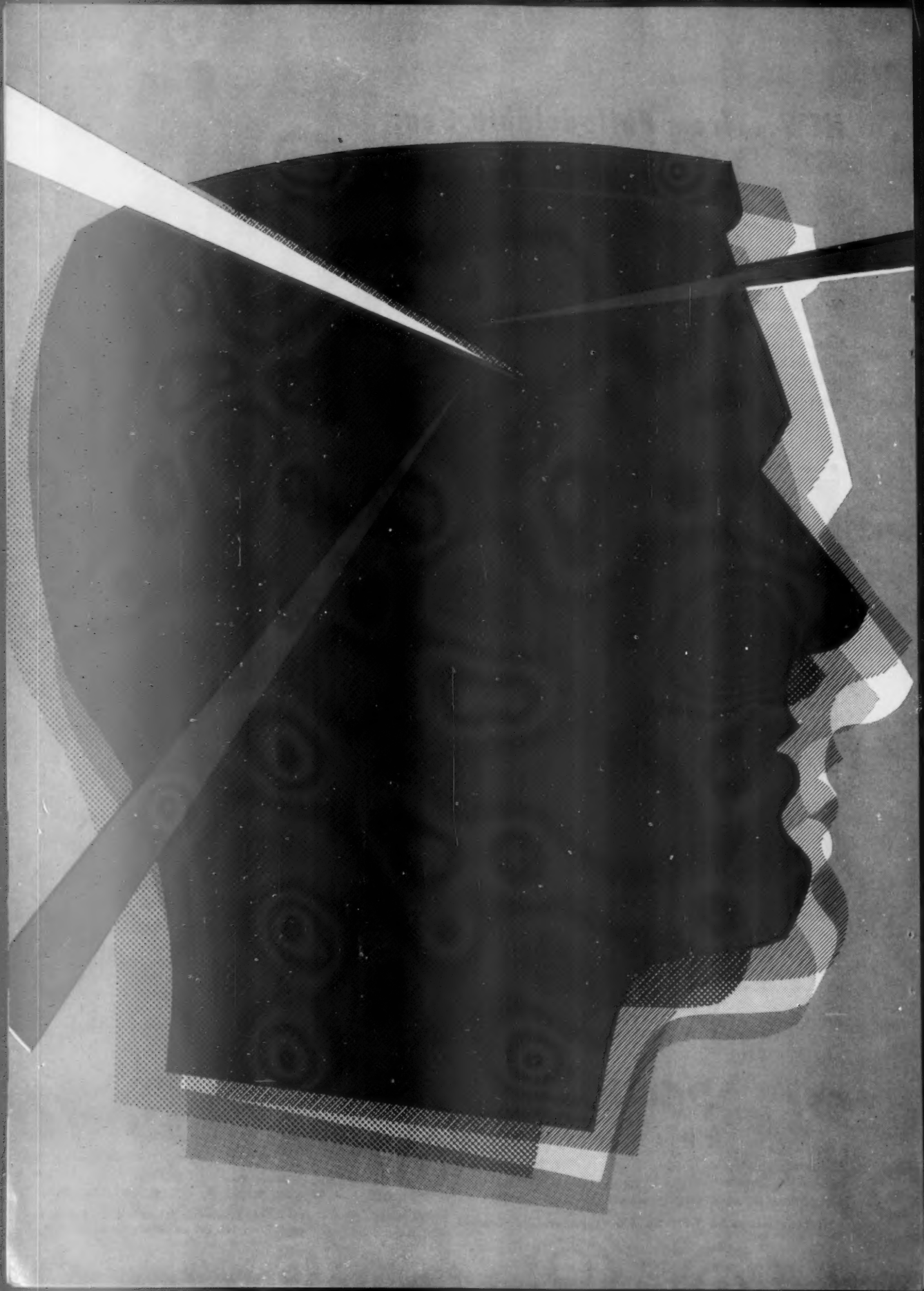
King of Prussia (Suburban Philadelphia), Pennsylvania

Offices in all Principal Cities • Virginia Gear & Machine Corp., Lynchburg, Va.

INDUSTRIAL GEARS & SPEED REDUCERS • LIMITORQUE VALVE CONTROLS • FLUID MIXERS • FLEXIBLE COUPLINGS

For More Information Write No. 296 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 297 on Inquiry Card—pg. 32→



are you shock-proof?

Ever sit in a traffic-trapped taxi for an hour . . . only to find your destination was just around the corner? Ever build a patio . . . only to find a contractor would have done it for less than the cost of your materials? Ever sweat six months over a problem on the job . . . only to find the solution had been available by picking up the phone?

Carpenter can't shock-proof you from everything, but we *can* help you with the application of electronic, magnetic and electrical alloys. No matter how difficult your problem, there's an excellent chance that our continuing research and development program has already produced information to save you time and money.

In addition to leading the field in technical assistance to industry, *Carpenter* also provides the convenience and reliability of one-source supply. You name it—dimensional control, resistance control, magnetic control—*Carpenter* offers the world's widest range of alloys to meet your most critical needs.

Carpenter alloys provide easy, fast fabrication, such as blanking, edge-winding, spot-welding and machining. And you waste no time experimenting to find the proper heat treating methods and temperatures. Highly specialized as these alloys are, *Carpenter* has "standardized" their properties to minimize problems from design to delivery.

Why not check *Carpenter* now . . . instead of later?

tool and die steels
stainless steels
***Carpenter* steel**
electronic, magnetic and electrical alloys
high temperature alloys
special-purpose steels
tubing and pipe
fine wire specialties



The Carpenter Steel Company, Main Office and Mills, Reading, Pa.

Alloy Tube Division, Union, N. J.

Webb Wire Division, New Brunswick, N. J.

Carpenter Steel of New England, Inc., Bridgeport, Conn.

QUALITY CONTROLLED PQ SODIUM SILICATES



Uniformity of PQ silicate of your choice, shipment after shipment, insures consistently dependable performance. From the wide selection of thirty solutions and twenty-five powders and solids, PQ offers you the right sodium silicate (or potassium) to fit your operations.

We shall be glad to mail descriptive literature on the PQ silicate line. When you need information on how to get the best results in a process or how to store or set up a distributing system, contact us.

PHILADELPHIA QUARTZ COMPANY
1033 Public Ledger Bldg., Philadelphia 6, Pa.

TRADEMARKS REG. U.S. PAT. OFF.



PQ SOLUBLE SILICATES

Associates: Philadelphia Quartz Co. of California
Berkeley & Los Angeles, California; Tacoma,
Wash. National Silicates Limited, Toronto &
Valleyfield, Canada.

PQ PLANTS: ANDERSON, IND.; BALTIMORE, MD.; BUFFALO,
N.Y.; CHESTER, PA.; JEFFERSONVILLE, IND.; KANSAS CITY,
KANSAS; RAHWAY, N.J.; ST. LOUIS, MO.; UTICA, ILL.

For More Information Write No. 298
on Inquiry Card—Page 32

How To Cut Traffic Costs

(Continued from page 75)

We find it advantageous to do no expediting without getting traffic's suggested routing after we give them all the pertinent facts such as location, weight, etc. Often traffic decides a surface carrier will be just as speedy as higher priced air transportation.

Through the efforts of traffic, the buyers and follow-up personnel in purchasing have been thoroughly trained to get specific data when they contact the vendor by 'phone or wire. This information includes the date shipment was made, the number of boxes, the approximate weight, complete routing and waybill number. By being thorough in our first attempt to get shipping data, we save traffic subsequent phone calls or wires and greatly speed up their tracing efforts. This is another indirect profit maker.

✓ **Take advantage of quantity rates.** We naturally talk quantity brackets in our purchases. Six thousand pounds of steel may be bought for less than 5600 lbs., 20 major castings for less than 19 but quantity buying doesn't stop with purchasing. Perhaps a foundry has 20 castings made on an order for 60 but our current release is for 16. Traffic looks at our order showing the delivery schedule and applicable weights. They quickly compute the over-all weight and tell us if we were to accept 20 at one time, we would get the extra four transportation—free. Major castings are often bought as far as 1000 miles away, so the savings are evident. When we have had major castings coming up to Milwaukee out of Chicago or some northerly cities traffic has noted from the purchase order copies a daily schedule of castings from each of two or more foundries in the same city. Traffic has made arrangements for pickups by the same carrier from foundries to give us TL rates when LTL rates would have been the best we could claim on separate deliveries.

Traffic has helped us save thousands of dollars by making pur-

chasing aware of impending rate increases. Steel, castings and other weight items can often be received 30 to 60 days ahead of schedule if it means earlier acceptance puts dollars in our pocket. We watch—in cooperation with traffic—the effective dates of rate increases and add profit for our company.

Two years ago we bought more than a million dollars worth of very large castings. Sources of supply, due to casting size, were limited and we received a better price from a New Jersey source than we could get anywhere in the Midwest. Our first reaction was that even though the per pound price was less by several cents transportation costs would offset the lower casting price. Traffic said, "Wait a minute." Within a few hours they had worked out routings and rates—with a promise of further betterment—which gave us a net saving—the New Jersey source over the midwest source—of \$0.3 per pound delivered. Six and one-half million pounds of castings were bought—representing a million and quarter purchase dollars—at a price of \$195,000 under what we would have paid if there hadn't been close traffic-purchasing vigilance. Incidentally, this vendor had his own routing worked out. Our traffic department's was lower. We didn't save that money, we made it.

Negotiate Traffic Prices

Even with stipulated rates, there is plenty of room for price negotiation—which is traffic know-how—in the procurement of carrier services. Purchasing agents across the country are hammering away at costs, and shipping methods and transportation are important items in the cost picture today. Buyers are just beginning to realize that buying is a lot more than just placing an order. Purchasing Agents should continue to enlarge their dependence upon Traffic for better transportation purchases, because transportation is just as much a part of our cost picture as the materials that make up our products

► END

Got a problem that calls for thread-cutting screws?

PARKER-KALON offers three new, improved thread-cutting screws for every application in every material



1 New, Improved P-K Type F*
... hardened thread-cutting screws developed for use in friable, granular or brittle material. The pilot, with its five tapping flutes, cuts a machine screw thread as the screw is turned in. The Type F is ideal for making fastenings to ferrous and non-ferrous castings, bronze or brass forgings, heavy gage sheet metals, structural steels, plastics and resin-impregnated plywood.



2 "Pentap"... the new, Improved P-K Type B-F*
(formerly F-Z) combining the five thread-cutting flutes of the Type F screw with the coarse-pitch, widely-spaced threads of the P-K Type B. The thread-cutting "Pentap" Type B-F distributes cutting pressure evenly, lets chips drop to the bottom of the hole, and prevents cracking of material. It is designed for making fastenings to comparatively thin sections and bosses in friable and brittle plastics.



3 P-K* Type L†
... is a completely new and improved thread-cutting screw developed by Parker-Kalon especially for use in Nylon. The Type L functions as a combination thread-cutting and thread-forming screw in that it cuts a small amount of the Nylon to allow the full diameter threads to form. Type L offers a particular advantage in Nylon assemblies which must be disassembled for service, because the P-K Type L can be removed and replaced without stripping or galling.

The five cutting flutes on the new, improved P-K Type "F" and "BF" reduce pressure development by 80 percent! The completely formed threads on these screws have sharper cutting edges, and 5 deep flutes that are of continuous depth. These features make for better clearance of the accumulated material and assure minimum stresses in driving, and avoid the possibility of stripping or galling.



FOR SEMS ... and Neoprene or Nylon washer STAPS* in thread-cutting and thread-forming tapping screws, or machine screws in any kind of pre-assembled fastener-washer combination, P-K can supply them, too!

KEEP AMERICAN INDUSTRY AT WORK ... BUY P-K ... MADE IN U.S.A.

*Patent Pending (U. S. Patent 2,350,345)

FOR SAMPLES OF P-K THREAD-CUTTING SCREWS AND SEMS. CALL YOUR LOCAL P-K "BULK-STOCKING" DISTRIBUTOR

PARKER-KALON® fasteners

PARKER-KALON DIVISION, General American Transportation Corporation, Clifton, New Jersey • Offices and Warehouses in Chicago and Los Angeles

Los Angeles, 1960:

Improve your Purchasing Performance

Purchasing executives undecided whether to attend the Annual Convention of Purchasing Agents in Los Angeles need look no further. All the reasons for going are here. The convention promises to be one of the most informative and most rewarding in N.A.P.A. history.

THE PLANNING of the national purchasing agents convention is a tense, once-in-a-lifetime experience.

Los Angeles purchasing agents have been working and preparing for the past 12 months to make the 45th Annual Convention of the National Association of Purchasing Agents a success.

A glance at the roster of speakers and events will prove to even the most skeptical purchasing executive that this meeting is truly "one that should not be missed."

Those fortunate enough to have attended previous national conventions can attest that this is not a social gathering. It is, instead, a conference jam-packed with profit-making information for the purchasing executive.

Program Varied

To meet the P.A.'s insatiable demand for professional knowledge, the 1960 convention will introduce after-breakfast workshops. The brand-new sessions will be held on both Tuesday and Wednesday mornings—offering a variety of subjects like "For the new purchasing agent and the new buyer," "For teachers of purchasing classes," "For problems that get worse," "Transportation and travel," "Inventory control for small companies," "Vendor performance," "Selecting purchasing personnel," "Salvage and surplus materials," and "Evaluating purchasing performance."

Speakers at the general conven-

tion sessions will include Dr. Robert Gray of the California Institute of Technology, who will cover "Techniques of Management," and William T. Reynolds, Los Angeles Metropolitan Transit Authority, discussing "Purchasing Intangibles."

The meetings of the national committees and specialized groups will round out the entire program. For example, the Electronic Industries Buyers meeting will present Lt. General Clarence

S. Irvine (ret.). He will discuss the over-all philosophy of the Air Force procurement picture and its application to industrial procurement.

The Food Industries Buyers Group, under the chairmanship of Howard H. Cagle of the Carnation Company, is planning a program which will be of vital interest to all P.A.'s in the food industry.

The convention will run four days—May 22 through May 25.

People To See in Los Angeles . . .



William T. Reynolds, director of purchases and stores, Metropolitan Transit Authority, Los Angeles, will speak at the Tuesday morning general convention session. His topic: "Purchasing Intangibles."



Dr. Harry S. Schwartz, Federal Reserve Bank of San Francisco, will sit with three other leading economists for the Wednesday morning panel discussion on the business and economic outlook.



Ronald Reagan of Pacific Palisades, Calif., will be the principal speaker at the Tuesday evening banquet. Mr. Reagan is known as one of Hollywood's most vigorous and out-spoken public-minded citizens.

Highlights of N.A.P.A. Convention Program

General Convention Speakers

Monday morning:

Thomas O. English, president, National Association of Purchasing Agents; general purchasing agent, Aluminum Company of America, Pittsburgh, Pa.

Rudolph F. Bannow, president, National Association of Manufacturers; president, Bridgeport Machines, Inc., Bridgeport, Conn.

George Romney, president, American Motors Corporation, Detroit, Mich.

Tuesday morning:

George A. Renard, associate editor, The Journal of Commerce, New York, N. Y.

Dr. Robert D. Gray, director, Industrial Relations Section, California Institute of Technology, Pasadena, Calif.

William T. Reynolds, director of purchases and stores, Metropolitan Transit Authority, Los Angeles, Calif.

Wednesday morning:

Panel discussion by leading

economists:

H. E. Luedicke, editor, The Journal of Commerce, New York, N.Y., moderator.

Neil H. Jacoby, dean, Graduate School of Business Administration, University of California, Los Angeles, Calif.

Chester F. Ogden, chairman, N.A.P.A. Business Survey Committee; vice president, The Detroit Edison Company, Detroit, Mich.

Harry S. Schwartz, senior economist, Federal Reserve Bank of San Francisco, San Francisco, Calif.

National Committee Meetings:

(Monday afternoon)

Containers

Fuel Oil

Nonferrous Metals

Paper

Steel

Textiles

National Group Meetings:

(Tuesday afternoon)

Professional Development

Workshops

Value Analysis-Standardization Workshop

Chemical Buyers

Distributors

Electronic Industries

Food Industries

Governmental, Educational and Institutional Buyers

Insulators of Electrical Conductors

Office Buyers

Petroleum Industry Buyers

Special Events

Sunday:

Early Birds Dinner

Monday:

National Committee and Group Luncheon Meetings
Hendricks Club Dinner

Tuesday:

After-Breakfast Workshops
National Committee and Group Luncheon Meetings
Banquet; Presentation of J. Shipman Gold Medal Award
Reception and Dance

Wednesday:

After-breakfast Workshops



Victor Quam, chief deputy purchasing agent of the County of Los Angeles, is general program chairman for the 1960 N.A.P.A. Convention. His committee has been hard at work for the past 12 months.



E. Benton Long, U. S. Lime Products Div., The Flintkote Company, is general convention chairman of the 45th Annual N.A.P.A. Convention which opens Sunday, May 22 and runs through May 25.



Rudolph F. Bannow, president of the National Association of Manufacturers, is president of Bridgeport Machines, Inc., Bridgeport, Conn. He will speak at the Monday morning session of the convention.



Basil L. Nelson, Northern States Power Corp., Minneapolis, Minn., is chairman of the J. Shipman Gold Medal Award Committee. His three-man group selects the person to receive purchasing's highest honor.

profits start in the buying

and the buying is up to you

You're the key man in building up your company's profits. A 5% saving in purchasing equals the profits in a 20% increase in sales.

CDF helps you add to your company's profits. With economical raw materials that meet your most exacting requirements.

With services that can help your company save on production costs and time.

CDF will custom-fabricate plastic parts to your specifications. We have the facilities for injection, transfer, and compression molding, as well as machining and forming.

We become an extension of your production line . . . saving you costs, headaches, and wastage.

Other cost-cutting CDF services include Technical Bulletins, in-plant technical assistance, plus a reputation for quality that assures dependability.

Write to us today for more information on these services.



CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE *Bush* COMPANY • NEWARK 41, DEL.

In Canada: Continental Diamond Fibre of Canada, Ltd.

46 Hollinger Road, Toronto 16, Ont.



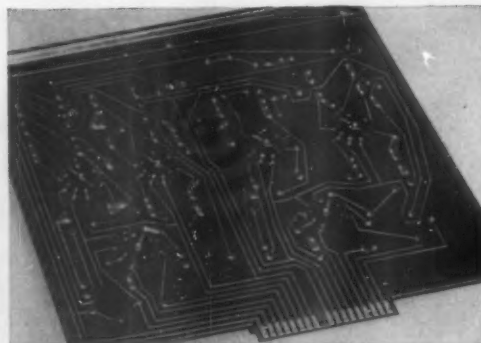
CDF CELORON® MOLDED PRODUCTS

Highly engineered industrial plastics. Meet stringent physical and electrical requirements. They are used for gears, couplings, intricate loom parts, etc. Write for CDF Celoron Catalog, or call your nearest CDF sales engineer.



CDF TAPES

Flexible insulating tapes for hand or automatic winding, of glass-supported silicone rubber, silicone varnish, Micabond, with and without backing, and skived and glass-supported Teflon®. Call your CDF sales engineer.



Heart of the best printed circuits— CDF DI-CLAD® LAMINATES

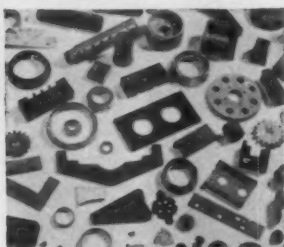
Only CDF offers the combination of Teflon® resin and glass cloth for use at microwave frequencies. CDF offers a full range of Di-Clad laminates for printed circuitry. High foil-bond strengths withstand soldering temperatures, reduce assembly rejects, and send assembly costs down. For complete information on Di-Clad grades . . . glass fabric and paper base, with Teflon, epoxy, and phenolic resins . . . write for CDF Di-Clad Folder.

* DuPont trademark



CDF DILECTO® LAMINATED PLASTICS for electrical and mechanical applications

All grades of Dilecto are high-quality laminated plastics . . . for rigorous duty in electrical, electronic, chemical, and mechanical equipment. Characteristics vary with grade, so get the expert assistance of your CDF sales engineer. Resins available in Dilecto: phenolic, heat-resistant phenolic, silicone, epoxy, melamine, polyester, and Teflon. Dilecto reinforcements are: glass fabric, nylon fabric, asbestos fabric, cotton fabric, glass mat, felted asbestos, non-woven cotton mat, and cellulose and asbestos papers. In sheets, tubes, or rods, as completely fabricated parts. Write for Dilecto Catalog.



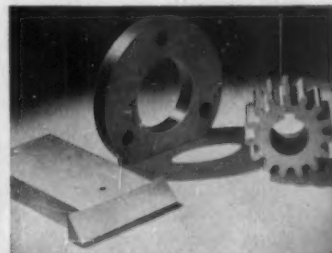
PLASTICS FABRICATION BY CDF SAVES YOU TIME, MONEY, WORRY

CDF's well-equipped machine shops eliminate the problems for you of shortages, rejects, waste. No time is lost at CDF between raw-material production and final fabrication. CDF assumes complete responsibility for delivery of fabricated parts as specified and on time. Undivided responsibility pays off for you.



For a better motor or generator—CDF MICABOND® INSULATING PARTS

CDF Micabond V-rings and slot liners insulate America's best motors and generators. Finest-quality mica splittings insure highest heat-resistance and insulation under severe operating conditions. Available in sheets, tubing, tapes (with cotton, silk, paper, woven glass, and Mylar® polyester film backings), and in fabricated parts. To your strictest specifications. On time. At low cost. Call your CDF sales engineer. Or, write for Micabond Catalog.



DIAMOND VULCANIZED® FIBRE keeps costs down

Standard of quality for over sixty years. In many grades: bone, fish-paper, trunk, commercial, built-up. In sheets, rods, tubes, strips, rolls, fabricated strips, and formed specialties. Write for Catalog. Low-cost Vulcoid: resin-impregnated Vulcanized Fibre. Made only by CDF. An insulation material with arc-resistance and mechanical properties of Vulcanized Fibre, plus many qualities of a phenolic laminate. UL-approved as Class A insulation. Write for Vulcoid Bulletin.

CDF PRODUCTS OF TEFLON®

CDF produces an unequalled range of Teflon® parts — small and large-diameter thin-wall tubing, glass-fabric laminates, flexible insulating tapes, ram extruded rods and tubes, and finished parts. Cementable Teflon® . . . in supported and unsupported forms . . . can be cemented to itself . . . and to most other products, with commercial adhesives. If you have a potential use for a product of Teflon . . . your CDF sales engineer is the man to call. Meanwhile, write for the new CDF Teflon® Folder.

* DuPont trademark

THERE'S A CDF SALES OFFICE NEAR YOU

BALTIMORE 14, MD. Northfield 5-0964
2451 Ellis Road
BIRMINGHAM 6, ALA. Vernon 3-5713
110 95th Street, N.
BOSTON Granite 2-2150
1245 Hancock St., Quincy 69, Mass.
BUFFALO 3, N.Y. Washington 3929
495 Ellicott Square Building
CHICAGO Columbus 1-5778
1515 N. Harlem Avenue
Oak Park, Ill. Euclid 3-5270
CLEVELAND 14, OHIO Cherry 1-5220
1621 Superior Bldg.
DALLAS 10, TEXAS Hamilton 8-1502
1502 South Good-Latimer Expressway

DAYTON 3, OHIO Clearwater 3-3114
39 N. Torrence St.
DENVER 2, COLO. AComa 2-2236
260 Denver Club Bldg.
DETROIT 25, MICH. Broadway 3-0447
201 Offcenter Bldg.
GREENSBORO, N.C. Broadway 4-0226
2103 Mimosa Drive
HARTFORD Hartford-Jackson 9-0397
15 Harding St., Wethersfield 9, Conn.
INDIANAPOLIS 5, IND. Walnut 5-9803
709 East 38th St.
KANSAS CITY 11, MO. Logan 1-6014
406 West 34th St.
LOS ANGELES 23, CALIF.
3050 East 11th St. Angelus 8-1371

MILWAUKEE 19, WIS. Lincoln 1-7660
6108 W. Lincoln Ave.
MINNEAPOLIS 2, MINN. Federal
610 Plymouth Bldg. 3-6666 - 3388
NEW YORK 17 Oxford 7-9617
51 East 42nd St.
OMAHA 31, NEBRASKA Regent 9110
116 North 40th St.
PHILADELPHIA Norristown-
Bridgeport, Pa. Broadway 5-0800
PHOENIX, ARIZONA Alpine 8-7893
P.O. Box 1587
PITTSBURGH 21, PA. Churchill
309 Shields Bldg. 1-0969
ST. LOUIS 10, MO. Mission 5-2253
1246 Hampton Ave.

SPARTANBURG, S.C. Spartanburg
834 Hayne Street 3-6397
Pacific Coast Representatives
MARWOOD LIMITED
SAN FRANCISCO 3, CALIF.
357 Ninth Street Hemlock 1-7893
SEATTLE 4, WASHINGTON
1714 First Ave. S. Main 3-4747
PORTLAND 4, OREGON Capital 3-5123
209 S. W. First Ave.
In Canada
CONTINENTAL DIAMOND FIBRE OF
CANADA, LTD.
46 Hollinger Rd., Toronto 16, Ontario

EXPORT DEPARTMENT: BRIDGEPORT, PENNSYLVANIA, U.S.A., PLANTS: NEWARK, DEL., BRIDGEPORT, PA., VALPARAISO, IND., SPARTANBURG, S.C.

For More Information Write No. 300 on Inquiry Card—Page 32

Packaging Data from AMA

PACKAGING RESEARCH: AN INVENTORY

Where to find latest data on packaging trends and techniques. Prepared under the auspices of AMA's Packaging Advisory Committee, this Research Study is a classified inventory of sources of information on packaging research. Includes a survey of packaging research needs, and reports special requirements of particular industry groups. "Should be on the desk of every man and woman interested in packaging, whether a buyer, a seller, a consumer, or a manufacturer of packages"—G. W. Aljian, Vice-President, California and Hawaiian Sugar Refining Company.

(\$6.00)

Other AMA books for executives who must keep up-to-date on packaging developments:

PACKAGING FOR SALES AND SHIPMENT (\$3.75)

MANAGING THE MATERIALS FUNCTION (\$3.75)

INTEGRATED PACKAGING AND MATERIAL HANDLING (\$2.25)

PLASTIC SHEET FORMING (\$3.75)

KNOW YOUR PACKAGING MATERIALS (\$3.00)

Order from Packaging Books, AMA, 1515 Broadway, New York 36, New York.

American
Management
Association

For More Information Write No. 316
on Inquiry Card—Page 32

News

Bookings Drop For Handling Equipment

Bookings of industrial material handling equipment rose 20% last year over 1958.

The Bookings Index of the Materials Handling Institute was 131.85 in 1959 (1954-100). In the previous year, the overall average was 109.87.

C. L. Fell, president of the MHI, predicts that material handling sales will be up from 15% to 20% this year. Among the groups that contribute to the index are Association of Lift Truck and Portable Elevator Manufacturers, Industrial Truck Association, Conveyor Equipment Manufacturers Association, Monorail Manufacturers Association, and Caster and Floor Truck Manufacturers Association.

Passenger Car Tire Shipments Hit New Peak

More passenger car tires were shipped by manufacturers last year than in any previous year.

The total was 97,329,359 tires—a 13.58% increase over 1958 deliveries says the Rubber Manufacturers Association. The previous high was 93,668,855 units sold in 1955.

Original equipment tire shipments increased 27.08% over the '58 levels. Replacement tire shipments also rose—8.49% over the previous high established the year before.

Tire production set a new record. Last year's output was 102,636,829 passenger car tires, 22.72% above the 1958 production. This also surpassed by 5.63% the 1955 level of 97,167,612 tires.

Inventories at the end of 1959 came to 23,578,057 tires. This marks an increase of 32.33% over the 17,817,687 units on hand at the end of 1958.

COMING
MAY 23
PURCHASING MAGAZINE'S
ANNUAL
VALUE ANALYSIS ISSUE

HOW TO SAVE SPACE WHEN STORING PARTS-IN-PROCESS

USE

- Wire Pallet Boxes
- Pallet Racks
- Battery Electric Lift Truck



Collapsible wire stacking boxes are placed in three-tier adjustable rack. A Walkie - Worklifter delivers and stacks the 2000 lb. loads with "room to spare" in a six foot aisle. Price \$2880. No other truck saves space like a Worklifter.

ECONOMY Walkie-Worklifter

4530 West Lake Street, Eastbrook 8-9110
Chicago 24, Illinois

For More Information Write No. 302
on Inquiry Card—Page 32

FREE!

416-PAGE

PIC
MASTER
CATALOG
#21



Lists over 12,000

PRECISION INSTRUMENT PARTS
and ASSOCIATED COMPONENTS

Available From STOCK!

GEARS • SHAFTS • COLLARS • CLUTCHES •
BEARINGS • COUPLINGS • DIFFERENTIALS
• SPEED REDUCERS and many other Precision Engineered Parts & Components.

Send For Your
Copy Today.



PIC DESIGN CORP.

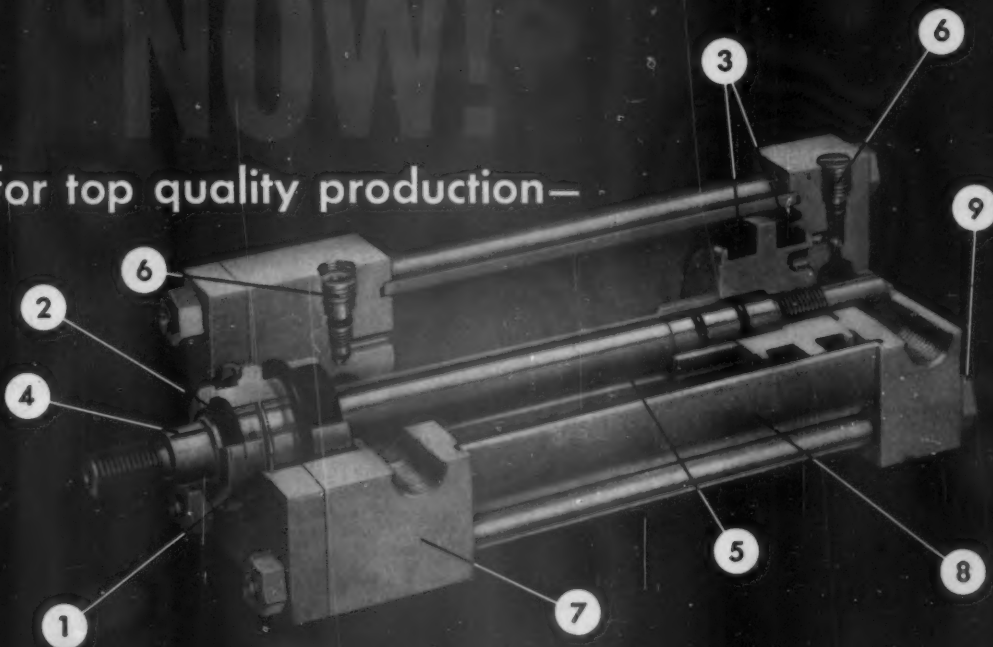
Subsidiary of BENRUS WATCH COMPANY, Inc.

477 Atlantic Ave., East Rockaway, L.I. N.Y.

For More Information Write No. 303
on Inquiry Card—Page 32

PURCHASING

NOW!
for top quality production—



1. Bronze Bearing with self-adjusting "U" Cup Piston Rod Seal for longer wear.

2. Rod Wiper protects Piston Rod Seal and keeps Cylinder clean.

3. "U" Cup Seals expand with pressure to provide positive seal with minimum friction.

4. Wrench Flats make for easy installation.

5. Ground, hard chrome-plated Piston Rods have minimum yield strength of 125,000 psi.

6. Self-locking cushion adjusting screw and ball check are below surface for protection . . . easily accessible.

7. For extra strength, Cylinder Ends and

Mounting Plates are machined from bar stock and steel forgings.

8. Cylinder is precision-finished brass for extra heavy duty.

9. Variety of mountings can be interchanged—easily match any installation requirement.

10. Interchangeable with all JIC Cylinders.

SCHRADER SQUARE-END CYLINDERS

meet and exceed JIC specs . . . 250 psi air . . . 750 psi hydraulic!

Here's compact, versatile straight-line power. Just look at the features!

Use Schrader's new square-end double-acting cylinders for holding, positioning, moving work—for push, pull or lifting—for automating manual operations. In five sizes up to 4-inch bore, and with five interchangeable mountings, these "square-ends" are economical and versatile. Bolt, leg, flush, side flush or base . . . each JIC Cylinder will mount all five ways. Suitable for air

pressures to 250 psi, or hydraulically to 750 psi—available cushioned or non-cushioned.

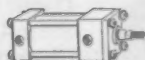
You get safe, controlled, low-cost power with Schrader "square-ends"—another addition to the line of famous Schrader quality Air Control Products.

Large stocks available at nearby Schrader Distributor—plus expert help to improve your air control circuits. Write for your complete specifications and data on these "square-ends."

Bolt Mounting



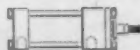
Leg Mounting



Flush Mounting



Side-Flush Mounting



Base Mounting



Schrader
a division of **SCOVILL**

A. SCHRADER'S SON
Division of Scovill Manufacturing Co.
47- Vanderbilt Avenue, Brooklyn 38, N. Y.

QUALITY AIR CONTROL PRODUCTS

Purchasing People In The News

(Continued from page 55)

Virginia-Carolina Chemical Corporation, Richmond, Va., has announced the appointment of **Robert R. Martin** as manager of its purchasing department. Mr. Martin succeeds **Douglas W. Laird** who was department manager until last March when he



Robert R. Martin

was named vice president. Mr. Laird is now in charge of purchasing and traffic. Mr. Martin will be responsible for the administrative functions of the department and will retain his duties in purchasing supplies and equipment. He joined V-C in 1951 as a buyer. He was named assistant manager of the department in 1957. He is a graduate of the University of Richmond.

Appointment of **Nicholas M. Cruciano** as purchasing agent for **Beckman Instruments' Spingo Division, Palo Alto, Calif.**, has been announced. Mr. Cruciano was senior buyer for the company's scientific and process instruments division, Fullerton. Prior to joining Beckman, he was senior buyer and assistant purchasing agent for **Consolidated Diesel Electric Corp., Stamford, Conn.** Mr. Cruciano is a member of the Southern Connecticut Purchasing Agents Association.

J. Richard Sayers, assistant director of **Monsanto Chemical Company's** purchasing & traffic department at **St. Louis, Mo.**, has been granted a leave of absence

to attend the spring session of the Advanced Management Program at Harvard University's Graduate School of Business Administration. Mr. Sayers will be the 38th Monsanto executive to attend similar courses as part of the company's program for developing key employees. The spring session began Feb. 23.

The Fafnir Bearing Company, New Britain, Conn., has named **Fred H. Hetzler** purchasing agent. He succeeds **Herbert P. Knowles** who has retired. Mr. Hetzler has been associated with Fafnir since 1944. For several years he was a principal buyer of production materials and supplies. Last September he was appointed assistant purchasing agent. In recent years Mr. Hetzler helped to pioneer the development of the first adult education courses in Conn. He is presently chairman of the Committee on Continuing Education for the National Association of Purchasing Agents.

DeWitt C. MacKenzie has been named director of purchasing for **The East Ohio Gas Co., Cleveland, Ohio.** A graduate of the U.S. Naval Academy, Mr. MacKenzie retired with the rank of rear



DeWitt C. MacKenzie

admiral after 26 years active duty with the Navy. His most recent assignment was in England where he was in charge of the Navy purchasing office. Earlier he

served as assistant chief for purchasing, Bureau of Supplies and Accounts. Mr. MacKenzie will direct overall purchasing policy and inventory control for East Ohio. He is a member of the National Association of Purchasing Agents and a former member of the British Purchasing Association.

Appointment of **J. Bruce MacKinnon** as purchasing agent of **Stromberg-Carlson's Special Products Division, Rochester, N. Y.**, has been announced. Mr. MacKinnon joined the company in 1959 as assistant purchasing



J. Bruce MacKinnon

agent in the Electronics Division. Previously he was with the **Bell Aircraft Corporation** in Buffalo for about eight years in several purchasing and procurement supervisory positions. He has a B.S. degree in business administration from **Ohio Wesleyan University.**

Chemstrand Corporation, Decatur, Ala., has named **Paul W. Gann**, staff purchasing agent. Mr. Gann has served as production control superintendent of the **Chemstrand Acrilan acrylic fiber plant** since 1958. He has been with the company since 1952. Prior to joining Chemstrand, he was associated with **Monsanto Chemical Company** as a research engineer for five years. Mr. Gann has a B.S. degree in Chemical Engineering from the **University of Michigan.**



PENCO-PLANNED locker rooms encourage neatness, employee pride and efficiency. And the lockers will provide long term, attractive, trouble-free service.



PENCO SHELVING lets you utilize space from floor to ceiling, keeps valuable stocks off floors, tightens inventory control, helps employees work faster, more smoothly.



GLEAMING FINISH on all Penco Steel Lockers will remain permanent as a result of a special, pre-enamel phosphatizing step that assures a tight enamel bond, permanent tough finish!



These are tools, too!

Storage is as active a part of over-all plant operations as production lines or tools. Whatever your storage needs and space, large or small, Penco Planning can show you how to put Penco steel lockers, cabinets and shelving to work to produce savings. Penco-planned storage helps speed materials handling, break bottle-necks, cut damage to parts and products, slash inventory time, streamline plant housekeeping and control pilfering.

When can your Penco Dealer give you a hand? Write direct for helpful catalogs: General Shelving Catalog No. 2400; Locker Catalog No. 6000.



ALAN WOOD STEEL COMPANY



PENCO DIVISION

410 Brower Avenue, Oaks, Pennsylvania

Steel Lockers • Steel Cabinets • Steel Shelving • Book Case Units



PENCO PLANNING can help you have an "industrial filing system" to feed production lines, protect costly parts, systematize any operation in your plant!



PENCO T-LINE Boltless Steel Shelving is assembled fast with efficient channel clips that slip into place without tools. You can cut original installation labor costs up to 50%. Penco Shelves are easy and fast to rearrange as required.

Buy all these steel products



Another busy day ahead of you? Probably so, if you are responsible for purchasing the many different steel products needed by an average company. Solution: streamline your purchasing operation by making CF&I your "headquarters" for a wide range of quality steel products, including those shown on these pages.

CF&I sales offices and warehouses are

equipped for prompt delivery — which is one of the meanings behind our Corporate Image. You'll find our people more than mere "order takers". They'll take an active interest in your account to assure efficient service at all times. Call a nearby CF&I representative to learn how we can serve you with dependable steel products. He'll be glad to be of help at any time.

For complete information, write for "CF&I's Principal Products Catalog G-50."

THE COLORADO FUEL AND IRON CORPORATION
DENVER • OAKLAND • NEW YORK

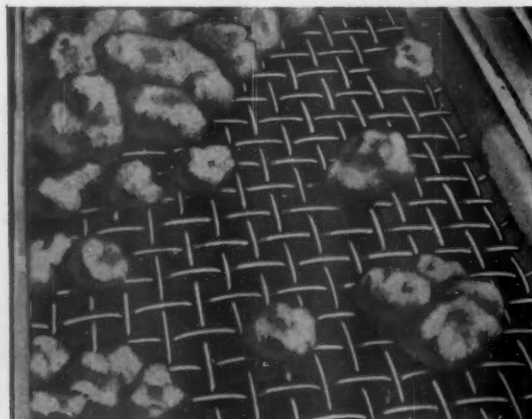


7477

REALOCK CHAIN LINK FENCE—This rugged fence gives permanent protection for property, buildings and outdoor storage areas. Available in galvanized steel which is highly rust resistant. Made in a variety of heights, with barbed or knuckled selvages, with or without barbed wire tops. Ask for a free estimate at no obligation.

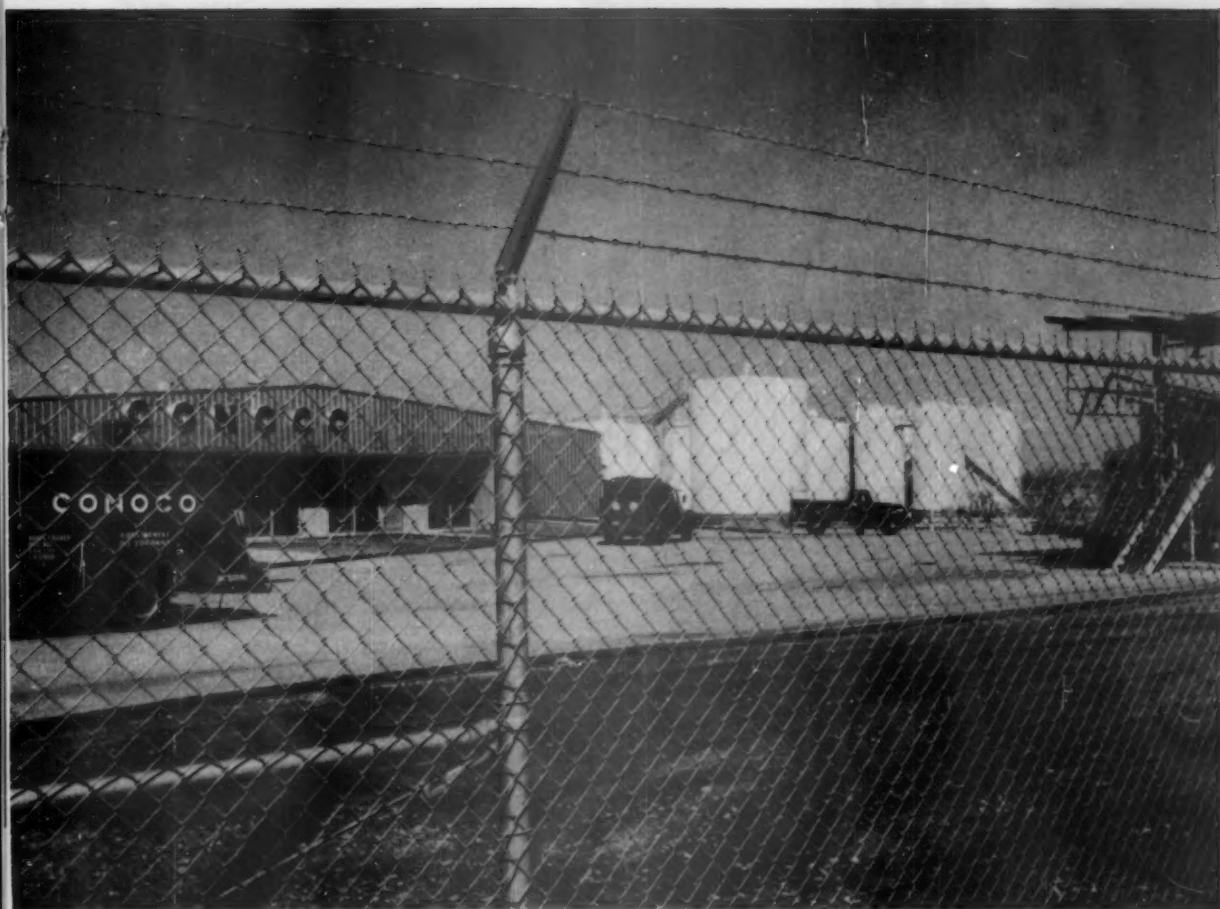


SPRINGS AND FORMED WIRES—CF&I-Wickwire Springs meet your industrial needs. You get quick delivery on compression, extension, torsion and flat springs in virtually any size, material or finish. CF&I engineers are always ready to help in designing special springs for specific applications.

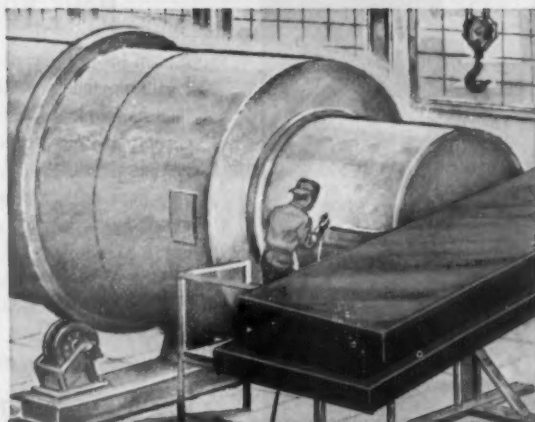


SPACE SCREENS—CF&I Space Screens are known for their accuracy and screening economy. Precision weaving and careful crimping assure long life. We tailor-make screens to give you average, rapid or slow screening, or maximum through capacity. Let us know your requirements.

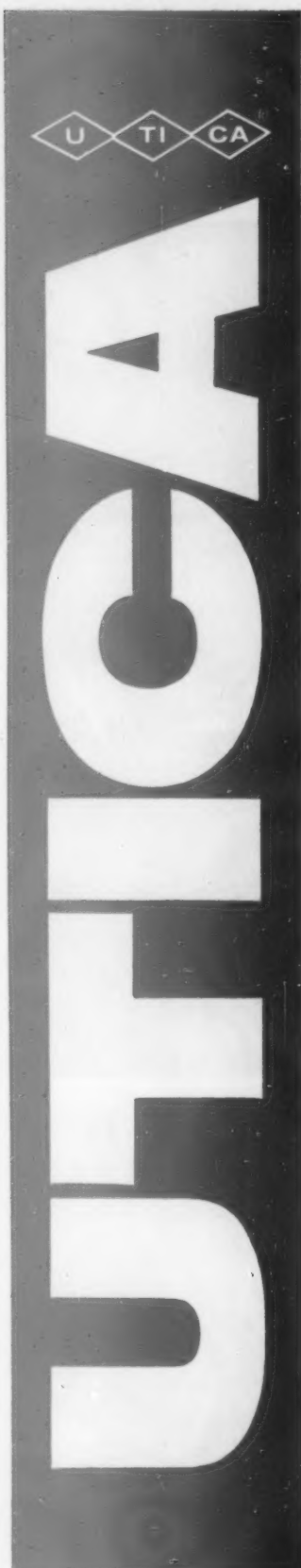
from one source...CF&I



WIRE ROPE—CF&I's 60 years of wire rope experience pays off in a safe rope that protects against injury and damaged equipment. These wire ropes are job-designed in various constructions, sizes and grades. Our newest wire rope—Double Gray-X—gives extra-high breaking strength and longer rope life.



STEEL PLATES—CF&I's Claymont plant is one of the leading producers of steel plates for all industrial uses. Made to ASTM and AISI specifications, they are produced in carbon steel, alloy steel and stainless-clad steel to meet specific requirements.



YES, WE DO HAVE YOUR SIZE

A giant 14" plier has now been added to Utica's famous "Rib-Joint" line. This powerful tool with parallel jaw opening of $2\frac{13}{16}$ ", completes Utica's full line of "Rib-Joints". All are available from stock. We serve our customers by carrying the widest assortment of pliers. All have been developed for specific uses. All are made to the high standards required by American industry. If you use pliers, ask to see our new catalog.

**Utica Drop Forge & Tool Division,
Kellogg-Hayes Company, Utica 4, N. Y.**

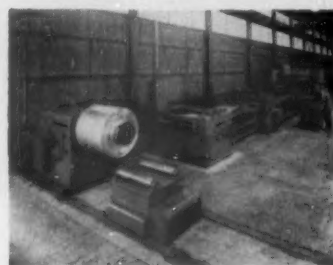
tools the experts use!

For More Information Write No. 307 on Inquiry Card—Page 32

Industry

Plans have been completed for the construction of a plant to manufacture Nylon 6 at the **Dow Chemical Company's** James River Division, **Williamsburg, Va.**

The multimillion dollar plant will have an initial capacity of 12,000,000 pounds per year of filament yarn, primarily for use in tire manufacture.



Ducommun Metals & Supply Co., Los Angeles, Calif., has put into operation decoiling, cutting, and leveling machinery to produce flat sheets from metal coil stock. The new line will enable the warehouse to supply aluminum, steel, copper, and brass sheets up to 48 in. wide in a wide range of thicknesses. Producing custom-sized sheets from coil stock will reduce scrap waste and handling by the user.

A new department to design, manufacture, and market industrial electronic computers and systems has been set up by the **Radio Corporation of America**. Industrial computers are custom designed for each process or machine control application. Although the new department has been established in New York, a plan to move it to the **Boston** area is being considered.

Sinclair Oil Corp. and Koppers Company, Inc. will build a major new plant to produce styrene monomer, a basic chemical used in the manufacture of plastics, synthetic rubber, latex, and other products. A jointly owned corporation will be formed to own and operate the plant, which will be located in **Houston, Texas.**

(Please turn to page 218)

Let SUN SHIP solve your machine problem

When you need machine work or specially built machinery of any kind, you'll find Sun Ship qualified to do the job exactly to your specifications. We have machine tools of every size, and the facilities and skills born of long experience.

When you have a machining problem, write or phone

SALES ENGINEERING DEPARTMENT

Sun SHIPBUILDING &
DRY DOCK COMPANY
CHESTER, PA.

For More Information Write No. 308 on Inquiry Card—Page 32



Got your copy?

NEW DOERR 14-PAGE

**Condensed
Catalog
AND MOTOR
'IDEA BOOK'**

ARE YOU an original equipment manufacturer? If so, you'll get lots of practical, job-solving suggestions from this new 14-page "idea book" of DOERR electric motors... useful data for designing, selecting and specifying. It shows many DOERR special designs that can help you. It also gives you complete dimension and price data on DOERR standard motors... in time-saving, condensed form. Put the new DOERR "idea book" to work for you...

DOERR OFFERS:

- Standard and special motors in fractional and integral hp. ratings.
- Drip-proof, totally enclosed and explosion-proof types.
- Face-mounted and flange-mounted models; brakemotors.
- Right-angle gearmotors to 5 hp.
- Full co-operation on specials.

Get Your Copy... Write Today,
on Your Company Letterhead to...



90 N. FOURTH AVE.
CEDARBURG • WIS.

For More Information Write No. 309 on Inquiry Card—Page 32
MARCH 14, 1960



Rugged and Reasonable for any Application

Here are a few of the many precision-made Chicago Locks available. They're engineered for maximum security — made of carefully selected and tested metals. And they emphasize attractive design and compactness.

Whatever your needs, you're sure to find a Chicago Lock that's perfect for your purpose... and priced right, too.

*One of the ACE Lock line—Maximum security locks with the exclusive round keyway.

Write today for your FREE catalog showing, in detail, the entire Chicago Lock line.

CHICAGO LOCK CO.

2052 N. Racine Avenue • Chicago 14, Illinois

For More Information Write No. 310 on Inquiry Card—Page 32



**EVERY TIME
YOU BUY
THIS
BRUSH...
YOUR
OWN
GOOD
JUDGEMENT
SHOWS**



METAL FINISHING MACHINES... AND FINISHING METHODS
POWER, PAINT AND MAINTENANCE BRUSHES • FOUNDRY PRODUCTION MACHINERY

For More Information Write No. 311 on Inquiry Card—Page 32


Today's industrial buyer is a special kind of expert. His job: spot and buy genuine value down the line—big purchase or small. And when it comes to *brushes*—both the men who *buy* and the men who *use* them agree on Osborn.

- The right Osborn Paint and Varnish Brushes, for instance, help your crew do jobs more quickly, more easily ... at less cost.

So to save buying time ... to cut buying costs ... to get built-in value automatically everytime—make Osborn your brand for all industrial brushes. Choose from a complete line of superior:

- Power brushes
- Paint and Varnish brushes
- Maintenance brushes

Full details in the new Osborn 112-page Catalog. Write for your free copy. The Osborn Manufacturing Company, Dept. U-54 Cleveland 14, Ohio.

Osborn Brushes 

Industry

(Continued from page 218)

Construction will begin immediately and is expected to be completed by the middle of 1961.

Sinclair will supply raw materials from its Houston refinery and Koppers will use or market the styrene output, estimated to be 70 million pounds per year.

Expands Pipe Fabricating Facilities

The Crane Co. has acquired Pipe Fabricators, Inc. of East Chicago, Ind., and Canadian Pittsburgh Piping Ltd. of Hamilton, Ontario. All of Crane's U. S. and Canadian fabricating activities will be consolidated at these new plants. Pipe shops now located in Chicago and Birmingham, Ala., will soon be transferred to East Chicago and operated as the Pipe Fabricating Division. The Canadian company will change its name to Crane Piping Ltd.



An integrated office and warehouse building has been opened by the L. S. Starrett Co. in Los Angeles. The new building will carry complete stocks of Starrett products — including hacksaws, bandsaws, flat stock, and instruments.

The Le Roi Division of the Westinghouse Air Brake Co. will move its manufacturing operations at West Allis, Wis., and Greenwich, Ohio, to a new plant at Sidney, Ohio. The consolidated unit will begin production this spring.

Fabrication, assembly, and related work will be transferred to the Sidney plant. All machining will be handled by the company's existing plant in Cleveland.

Le Roi products include air compressors, engines, and rock drills.

PURCHASING



**How a nut
can make
(or break)
your reputation**

...and even bring in re-orders

A nut comes loose. A wheel comes off. And down comes Billy! No great loss, except perhaps to his dignity. But when a lost nut knocks out a rock drill, or a tractor, or a piece of the heavy equipment that *you* make—then what?

Down goes the machine! Down goes production—for no telling how long! And down goes your reputation as a maker of quality equipment! You can blame it on the nut, but your customer blames *you*!

This kind of embarrassing and costly "Reliability" failure simply cannot occur when you specify Elastic Stop® nuts for critical bolted connections. For no matter how rugged or repeated the shock or impact, no matter how bone-shaking or constant the vibra-

tion . . . Elastic Stop nuts *simply will not work loose!*

Elastic Stop nuts with their exclusive, vibration-damping nylon locking inserts are nothing new. They have been widely used for over 20 years by an increasingly large number of quality-conscious manufacturers who have learned that Elastic Stop nuts give built-in insurance against product failure—the kind of reliability that shows up in customer maintenance records and adds up to reorders. Let us send you information showing how manufacturers have protected the reputation of their products with Elastic Stop nuts. Ask for Bulletin 5901. Dept. S47-315, Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, New Jersey.



for the ring of reliability

ELASTIC STOP NUT CORPORATION OF AMERICA

For More Information Write No. 312 on Inquiry Card—Page 32

Employment Service

PURCHASING AND PROCUREMENT ADMINISTRATOR

Major national company in the electronic field has opening for purchasing and procurement executive. Should have experience at the corporate level of a large company in administering procurement activities including vendor relations, liaison between engineering and procurement, make or buy programs, value analysis government contracts. Location: New England. Salary: \$15,000-18,000 Fee Paid. Contact: M. J. Harper, President, Harper Associates, Personnel Consultants 180 Broadway, New York 38, N.Y. CO 7-3456.

Experience: Twenty years purchasing, 12 years director of purchasing, aircraft, missile, electronic, ground handling equipment, construction, steel fabrication. Heavy on administration and electronics, hydraulics, instrumentation. Have plant management experience with excellent knowledge in manufacturing in the above industries. As director of purchases supervised up to 135 people. 33 buyers 100 clerks.

Education: BBA. Business management major. 77 hours toward BSME. minor in finance.

Will relocate. Prefer the South or Southwest or West.

Write: Box 135

Experience: Currently purchasing agent for multi-plant metal fabricating operation responsible for approximately \$18,000,000 in purchases per year. Previously four years as assistant purchasing agent for electronics firm and as a buyer for a jet engine manufacturer for 3 years. Well-diversified background in buying steel, aluminum castings, forgings, a wide range of electronic parts and supply items. Have supervised complete purchasing function including material control. Member N.A.P.A. Complete resume available.

Education: BS Degree — production management plus summer school in additional purchasing courses.

Will relocate.

Write: Box 134

Experience: Four and one half years purchasing experience; three and one half years research experience for leading multi-plant company. Purchasing experience includes purchases of mill supplies, lumber, steel, castings packaging, coal, machine tools, electric equipment, etc. Experience in standardization of purchasing forms, value analysis & purch. research.

Education: B. S. Degree from large midwestern university.

Will relocate: Prefer to work in South or Southwest.

Write: Box 133

Experience: Qualified with 14 years experience purchasing for two companies—one medium-sized and the other a large plant of national company. Have purchased large variety of raw materials as well as MRO and office supplies and equipment. Supervised office details and maintenance and supply store room. Disposed of obsolete materials and scrap. Investigated alternate materials and sources for cost reduction program. Negotiated yearly contracts. Two years production control supervisor budgeting and controlling line hours and inventories. Supervised scheduling raw materials, production and shipping. Two years general foreman.

Education: B.S.C., plus two years in bus. adm.

Will relocate.

Write: Box 137

Experience: Buyer-electrical components—heavy in resistors, capacitors, semi-conductors, etc. Both CPFF and firm price buying, familiar with gov. procurement regulations. Responsible for inventory control and traffic, all vendor interviews and contacts. Under present conditions have progressed as far as possible in present position.

Education: B.S. in bus. adm.—major in marketing.

Will relocate.

Write: Box 140

Experience: Three years production line experience. Purchasing agent for television and radio manufacture for five years. Traffic manager for the same length of time. Ass't office manager for three years.

Education: Public speaking, and traffic management courses, one years of purchasing by mail.

Will relocate. Los Angeles or Sacramento, Calif.

Write: Box 139

V. P. PURCHASING

Triple AAA-1 National manufacturer of metal goods has outstanding opportunity for an aggressive V. P. of purchasing, approximately forty years old, to head up all purchasing of multi-plant operations. Require engineering and accounting background. Send complete resume to: Box 408.

Experience: Twelve years extensive purchasing, accounting, and office management, principally in major construction and engineering firms. Contract negotiation and preparation. Organization of departments and establishing procedures, including expediting and material control. Domestic and foreign, main office and field operations. Experience government specifications and procedures.

Education: Numerous bus. adm. special courses. Purchasing, accounting, and management studies and courses.

Will relocate. Calif. preferred—not obligatory.

Write: Box 138

Experience: Better than 20 years extensive experience in industrial purchasing and traffic. Responsible for expenditures in excess of 10 million dollars annually. Also directed related activities of shipping, receiving, inventory control, contract negotiations, customers service. Desire position as manager or director of purchases but will consider responsible position in sales and/or administration—salary \$12,000-15,000 if early potential for advancement.

Education: Six years college (nights) bus. adm.

Will relocate. Prefer either N.J.—N.Y. area or Midwest but not restricted to these areas.

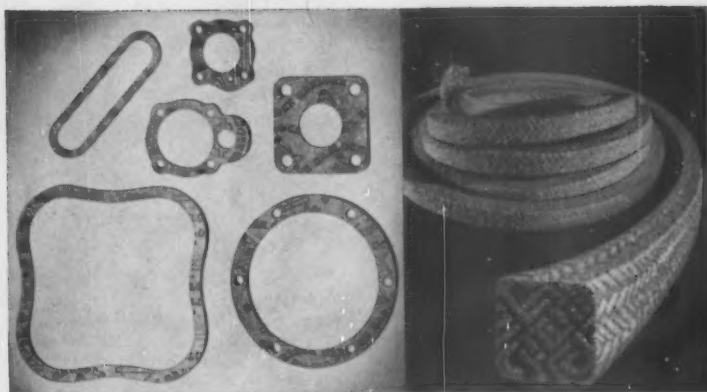
Write: Box 141

EMPLOYMENT SERVICE
CONTINUED ON
PAGE 224



ENGINEERED PRODUCTS

for Plant
Maintenance



"900" Gasketing (left), LATTICE-BRAID Packing satisfy all the requirements of good packing practice.

DEPENDABLE SEALING WITH FEWER DOLLARS INVOLVED

Here's a way to satisfy all the requirements of good sealing and packing practice—choose Garlock products to do the job. They are easy to handle and install; offer positive protection against leakage; will not damage equipment. All in all, they add up to the most efficient and economical sealing available anywhere. Here are two fine examples:

Garlock "900" Gasketing is ideal where high temperatures (+700° F) are involved. Garlock "900" is made of long fibre Canadian asbestos and a special Garlock compound, bonded under pressure and vulcanized into a homogeneous structure. Recommended for steam, gas, air and other service, this sheet is strongly resistant to plastic flow under heavy bolt load, sufficiently compressible to compensate for reasonable unevenness or irregularities in the surfaces of flanged joints. Available in sheet form, sizes from 40" x 40" to 120" x 120", thicknesses from $\frac{1}{16}$ " to $\frac{1}{4}$ ". Gaskets in any size or shape can be cut from this sheet to meet customer specifications. Catalog AD-162.

Garlock LATTICE-BRAID* Packings are engineered for longer packing life. They employ a through-and-through braiding construction. As illustrated above, each strand passes diagonally through the packing at a 45° angle. This unique construction makes a completely unified structure, resulting in greater strength. Since there is no single outer braid to wear through, Garlock LATTICE-BRAID will wear far beyond the limits of ordinary packings. Applicable against water, steam, oil, gases and chemicals to 700° F. Catalog AD-131.

Discuss these and other fine Garlock products for in-plant service with

G A R L O C K

your local Garlock representative. He's located at one of Garlock's 26 sales offices and warehouses throughout the U.S. and Canada. Or, write for catalogs indicated. The Garlock Packing Company, Palmyra, N. Y.

Canadian Div.: The Garlock Packing Company of Canada Ltd.

Plastics Div.: United States Gasket Company

Order from the Garlock 2,000 . . . two thousand different styles of Packings, Gaskets, Seals, Molded & Extruded Rubber, Plastic Products

*Registered Trademark

Employment Service

Experience: Twelve years natural gas utility with double responsibility as purchasing agent and general accountant. Experience includes knowledge of inventory control, warehousing, general ledger, income and expense reports. Present position limited. Ambitious for better future.

Education: Completed courses in accounting and purchasing.

Will relocate.

Write: Box 142

Experience: Six years as ass't P.A. and purchasing agent for chemical and specialized packaging companies. Established purchasing dept from scratch; all phases; inventory control, forms, expediting, traffic, quality and specification control. Bought chemicals, set-up boxes, laminated foil, molded plastics, folding cartons and commodities: fats, oils and latex.

Education: B.A. degree. "Techniques Course" by Phila. Purchasing Agents Association—certificate. Private pilot's license.

Will relocate.

Write: Box 143

Experience: Ten years purchasing agent for major engineering, construction & consultant firms. All phases of purchasing market research, expediting, project coordination, export procedures, sub-contracts, foreign markets. Extensive work in inventory control & warehousing. Foreign assignments consist of Middle East, Latin America & Europe.

Education: B.S. mechanical engineering.

Will relocate. Continental U.S.A. but prefer foreign assignment, Far East or Latin America.

Write: Box 144

Experience: Two years purchasing experience—all phases of procurement, policy and administration. Material control manager—had experience of initially installing production and material control system. Three years as branch manager in control of administrative duties and functions of branch sales office. Also direct sales experience.

Education: B.S. Degree bus. adm.—major management and finance. One year post graduate—liberal arts and science. Certificate for blue print reading & design.

Will relocate. New England States with preference to Central Conn.

Write: Box 145

Experience: Four years sales and customer service in electrical supplies. Experience in industrial construction Eight and one half years purchasing and missile industries, as buyer purchasing agent, and engineering liaison man.

Education: BBA.

Will relocate.

Write: Box 146

Experience: Three years purchasing, all phases, in pulp & paper mill. Thorough knowledge of contract negotiations inventory controls and record keeping. Seven years maintenance work, two years sales (material handling), one year traffic mgmt., commercial warehouse, pool car distribution and motor transportation.

Education: B.S. bus. adm.—majoring in industrial management.

Will relocate.

Write: Box 149

Experience: In the purchasing field 16 years. The past 12 years as purchasing agent, with personnel experience. Thoroughly capable of buying screw machine parts, stampings, raw material, castings, electrical items, office and maintenance supplies. Familiar with job shop and manufacturing purchasing, with government contract buying.

Education: One year college.

Will relocate.

Write: Box 152

HOW TO APPLY

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence—whether for forms, or in answer to an employment advertisement, to: Box No., Employment Service Department, Purchasing Magazine, 205 East 42nd Street, New York 17, New York.

BUYER

A national manufacturer in Textile field has opening for a buyer at plant level. 3 to 5 years experience, age 25 to 30, location Carolinas. Send complete resume and state salary requirement. Write: Box 409.

Experience: Twenty years in purchasing. All types of printing, paper, box wraps for setup and folding boxes, labels, tags, letterheads, envelopes, POP material, catalogs, chemicals, raw material; laboratory, maintenance, shipping room and office supplies, business forms, bottles, cans, plastic containers and foil.

Education: Traffic course.

Write: Box 132

Experience: Fourteen years with Mass. paper converter. Full charge all aspects of purchasing from MRO to contract work and capital equipment. Have initiated own programs of inventory control, coordination of production and supply and traveling requisitions. Will change to similar industry but desire to take better advantage of aptitude towards mechanical, aeronautical or electronic lines. Age 34.

Education: College—USAF. Commercial pilot. University extension on purchasing, advanced purchasing, mathematics, jet engine theory and electronic maintenance.

Will relocate.

Write: Box 151

Experience: Twenty years as purchasing agent and assistant. Manufacturing heavyweight with proven ability. Able administrator. Supervise buyers, expeditors, inventory control, budgets, etc. Numerous diversified products procured: large forgings, castings, pressure vessels, steel shapes, mill supplies, office equipment, sundries. Government contracts; large following steel mills and vendors. Purchasing volume \$8-10 million annually.

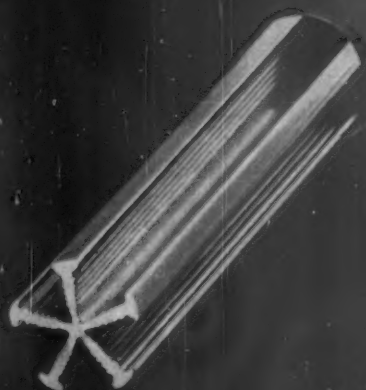
Locate: Prefer New York City area.

Write: Box 153

For More Information about ad on facing page Write No. 314 on Inquiry Card—pg. 32→

PURCHASING

AGAIN



P-K Internal-Fin Coolers can be furnished insulated with Rock Cork laid in asphalt and covered with a heavy steel jacket. Illustration shows insulated cooler.

Revere helps fit the metal to the job AND PATTERSON-KELLEY CUSTOMERS SAVE 3 WAYS

Because of its unique design, the Patterson-Kelley Freon Water Cooler shown at right above saves space, requires less Freon, while its reduced weight and size mean lower cost.

With the P-K Type FO Internal-Fin Freon 22 Water Cooler the installation can be designed for a shell 2 diameters less and 1 to 2 feet shorter than with conventional plain or bare tube coolers. This is made possible by the use of $\frac{3}{4}$ " O.D. \times .035" gauge Revere copper tube drawn over a Revere aluminum extruded fin as shown above. Serrated surface of the fin enhances refrigerant vaporization.

By making both the tube and the extruded fin, and assembling them in the same plant a tight contact between the two metals is assured, thus establishing maximum heat transfer. Once again Revere has helped fit the metal to the job, money was saved and a more efficient product produced.

Why not consult with Revere's Technical Advisory Service and take advantage of its extensive knowledge in "fitting the metal to the job." This Service has saved others money, why not you?



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

Mills: Rome, N.Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N.Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities. Distributors Everywhere.

Advertisers In This Issue

A	
Acco Products, Inc.	171
Advance Products, Inc.	166
Aero Mayflower Transit Co.	161
Aeroquip Corp.	131
Air Express Division—Railway	121
Alain Wood Steel Co., Penco Div.	215
Allegheny Ludlum Steel Corp.	54
Allied Chemical Corp., General Chem- ical Division	45
American Hard Rubber Company	
Division of Amerace Corp.	25
American Management Association	212
American Pulley Company, The	66
American Smelting & Refining Company	110, 111
American Telephone & Telegraph Co., Long Lines Dept.	36
Armour Industrial Chemical Company	20
B	
Babcock & Wilcox Co., Tubular Products Div.	2
Baldwin-Lima-Hamilton Corp.	120
Baltimore & Ohio Railroad, Freight Dept.	150
Bastian Blessing Company, The	23
Bausch & Lomb Optical Co.	157
Behr-Manning Co.	4th Cover
Bethlehem Steel Co.	187
Black & Decker Mfg. Co.	116, 117
Borroughs Mfg. Co., Subsidiary Amer. Metal Prod. Co. of Detroit	122
Bostitch, Inc.	169
Boston Gear Works	109
Brook Motor Corporation	102
Brown Lipe Chapin, General Motors Corp.	147
Bulldog Electric Products Division, I-T-E Circuit Breaker Company	58
Bussmann Mfg. Co.	153, 159
C	
Callaway Mills, Inc.	118
Carpenter Steel Co., The	204, 205
Chicago Heights Steel Company, Speedicut Div.	16
Chicago Lock Company	219
Classified Advertising Section	160
Cleveland Container Co., The	154
Cleveland Twist Drill Co.	30
Colorado Fuel & Iron Corp.	
Combination Products	216, 217
Columbia Southern Chemical Corp.	142, 143
Conover-Mast Purchasing Directory	141
Container Corp. of America	201
Continental Diamond Fibre, Div. of the Budd Co., Inc.	210, 211
Continental Steel Corp.	200
Continental Tool Works Div.	60, 61
Copperweld Steel Co., Ohio Seamless Tube Division	59
D	
Denver-Chicago Trucking Co.	140
Do All Co., The	47
Doerr Electric Corp.	219
DuPont de Nemours & Co., Inc.	
E. I.	28, 48, 185
E	
Eastman Kodak Company, Business Photo Methods Division	165
Economy Engineering Co.	212
Elastic Stop Nut Corp. of America	221
Emery Air Freight Corp.	4
Ex-Cell-O Corp.	60, 61
F	
Fafnir Bearings Co.	26
Fairfield Mfg. Co.	196
Federal-Mogul Division Federal-Mogul Bower Bearings, Inc.	119
Firestone Steel Products Company	14
Forge & Fittings Division H. K. Porter Company, Inc.	63
Fort Howard Paper Co.	155
Foster Co., L. B.	50
Frasse & Co., Inc., Peter A.	191
G	
Garlock Packing Co.	223
General Electric Company Lamp Division	181, 182
Wiring Device Dept.	98
Goodrich Industrial Products Company, B. F.	3
Goodyear Tire & Rubber Co., Inc.	114, 115
Graphic Controls Corp.	29
Gries Reproductor Corp.	108
H	
Hamilton Foundry Inc.	126
Hammermill Paper Company	167
Hassall, Inc., John	46
Hindley Manufacturing Co.	62
Holo-Krome Screw Corp.	135
Hubbell, Inc., Harvey, Machine Screw Dept.	190
Hussey & Co., C. G.	136
Hyatt Bearing Div., General Motors Corp.	197
I	
Ingersoll Rand Company	137
Inland Container Corp.	113

International Business Machines	175
Interstate Motor Freight System	53
I-T-E Circuit Breaker Co.	148, 149, 189
J	
Joliet Wrought Washer Co.	156
Jomac, Inc.	202
Jones & Laughlin Steel Corp., Stainless Strip Division	103, 104, 105, 106
K	
Kex National Service	118
Klein & Sons, Mathias	134
L	
Laminated Shim Co., Inc.	39
Lancaster Glass Corp.	124
Lunkenheimer Company	64
Lyon Metal Products, Inc.	22
M	
Marsh Instrument Company Division of Colorado Oil & Gas Corp.	193
Manning Maxwell & Moore, Inc.	33
Marathon Division of American Can Company	46
McGraw Edison Co., Volewriter Div.	168
Micro Switch, a division of Minne- apolis-Honeywell Regulator Co.	198, 199
Mobil Oil Company	18, 19
Moore Business Forms	172
Mueller Brass Co.	40, 41
N	
National Cash Register Co.	170
National Forge Co.	192
National Lock Company	179
National Supply Co., Spang-Chalfant Div.	151
New Departure Division of General Motors	8
Norton Co.	4th Cover
O	
Ohio Seamless Tube Div. of Copperweld Steel Co.	59
Old Town Corp.	174
Olin Mathieson Chemical Corp., Aluminum Division	34, 35
Osborn Mfg. Co.	220
P	
Packaging Corporation of America	51
Page Fence Assoc.	134
Pan American World Airways	24
Parker Kalon Div. General Amer. Trans. Corp.	207
Penco Division, Alain Wood Steel Company	215
Perrygraf Corporation	194
Philadelphia Gear Corp.	203
Philadelphia Quartz Company	206
P I C Design Corp.	212
Powell Valve	228
PURCHASING MAGAZINE	227
R	
Radio Corp. of America, Tube Division	138
Railway Express Agency, Inc., Air Express Div.	121
Remington Rand Division of Sperry Rand Corporation	173
Revere Copper & Brass, Inc.	225
Ridge Tool Company, The	13
Riesel Textile Corporation	10
Riverside Alloy Metal Division of H. K. Porter Company, Inc.	99
Roberts Rubber Co., Weldon	166
Roebling's Sons Co., John A.	123
Rohm & Haas Co., Plastics Division	6
Railway Bearing Company	56
Rome Cable Corporation	132, 133
Russell, Burdall & Ward Bolt & Nut Company	3rd Cover
Rust-Oleum Corporation	57
Ryerson & Son, Inc., Joseph T.	68
S	
Sandvik Steel, Inc.	43, 146
Schrader's Son, A.	213
Sealmaster Div., Stephens-Adamson Mfg. Co.	31
Sel-Rex Corporation	112
Sharon Steel Corp.	139
Shell Chemical Corp.	2nd Cover
Simonds Saw & Steel Company	127
SKF Industries, Inc.	1
Spang-Chalfant Div., National Supply Company	151
Stackpole Carbon Co., Electronic Components Division	160
Standard Steel Works Div.: Baldwin-Lima-Hamilton	120
Stanscrew Fasteners	32
Stearns Electric Corp.	194
Stephens-Adamson Mfg. Co., Sealmaster Div.	81
Stewart Warner Corp., Alomite Dept.	125
Studebaker-Packard Corp.	92, 93
Sun Shipbuilding & Dry Dock Company	219
T	
Texaco, Inc.	37
Thermoid Division, H. K. Porter Company, Inc.	107
Thomson Co., Judson L., Rivets Div.	145
Timken Roller Bearing Co., Industrial Div.	129

Tinnerman Products, Inc.	12
Tubular Rivet & Stud Co.	38
U	
Udylite Corp.	152, 153
U. S. Graphite Co.	49
United States Rubber Company	177
Utica Drop Forge & Tool Corp.	218
V	
Vascoloy Ramet Corporation	183
Virginia Gear & Machine Co.	203
W	
Watchemoket Optical Co.	144
Waterbury Rolling Mills, Inc.	128
Waverly Petroleum Products, Inc.	65
West Chemical Products, Inc.	102, 108, 112, 144
Westinghouse Electric Corp., Lamp Div.	96, 97
West Virginia Pulp & Paper Co.	101
Wickwire Spencer Steel Div., of the Colorado Fuel & Iron Corp.	216, 217
Y	
Yale & Towne Mfg. Co.	162, 163
Youngstown Sheet & Tube Co.	195

Purchasing

205 East 42nd Street, New York 17, N.Y.
Murray Hill 9-3250

Ray Richards Vice President & Publisher
Alex G. Gram Assistant Publisher
Joseph T. McCourt Sales Manager
Hugh Robinson Eastern Regional Mgr.
Jack Morris District Mgr., New York
John Denlon New York
Thomas F. Hannon Mid-west Regional Mgr.
Ed Crilly District Mgr., Chicago
C. D. Francisco Chicago
C. R. Kingsley Western Regional Mgr.
Los Angeles
Ellsworth Brown
Central Regional Mgr., Pittsburgh
Robert Hawley District Mgr., Cleveland
Jack T. Steelman District Mgr. Detroit
Wayne Slockhower Promotion Manager
Roy Hubbard Mgr. Circulation Service
Irene Kreidler Mgr. Advertising Service
Lucy D'Elia Advertising Production

BRANCH OFFICES

737 North Michigan Avenue Chicago 11, Ill.
3101 Euclid Avenue Cleveland 15, Ohio
864 So. Robertson Blvd. Los Angeles 35, Calif.
868 National Press Building Washington 4, D.C.
15817 James Couzens Highway Detroit, Mich.
601 Grant Street Pittsburgh, Pa

Published by CONOVER-MAST PUBLICATIONS, INC.

B. P. Mast, Sr. Chairman of the Board
B. P. Mast, Jr. President
Ray Richards Vice President
A. M. Morse, Jr. Vice President
A. H. Dix Vice President, Research
Harvey Conover, Jr. Vice President & Secretary
Leo Haggerty Treasurer
John T. Dix Director of Mid-West Operations
L. E. McMahon Production Manager
Daniel G. Smith Circulation Manager



Conover-Mast Publications
Purchasing
Mill & Factory • Space/Aeronautics
Construction Equipment
Electrical Manufacturing
Volume Feeding Management
Business/Commercial Aviation
The Boating Industry
Conover-Mast Purchasing Directory

Coming May 23rd

PURCHASING's Annual Value Analysis Issue

Act now to get copies of this valuable "how-to" reference for your entire staff!

PURCHASING's editors went behind the scenes at Ford to bring you the biggest purchasing story of the year. You learn how purchasing men tore down dozens of foreign cars and PRE-COSTED every component of the Falcon. That's how they were able to give management the realistic cost figures it needed.

You see how purchasing guided the designers in creating a car which would be practical to manufacture . . . then helped the engineers draw up specs which allowed plenty of room for alternate supply sources. Result of purchasing's inspired labors: a brand new car model actually coming off the assembly lines *at the budgeted cost!*



Learn the inside facts about purchasing's monumental job in planning . . . pricing . . . styling . . . producing the Ford Falcon. This new concept in car design shows that there is no limit to the importance of the purchasing function . . . in any plant, in any industry!

This Unique Cost Reduction Annual Will Show You . . .

HOW Value Analysis is applied in *any* purchasing department, regardless of size or type of industry.

HOW Value Analysis becomes an integral part of your materials management program.

HOW Value Analysis promotes teamwork between purchasing, engineering, and suppliers.

HOW Value Analysis can be put to work in your department . . . and how to "value analyze" the benefits you can hope to achieve.

Hundreds of actual case histories show you . . .

HOW Value Analysis can save you money in Production Tools — Component Parts — Materials — Electrical Equipment — Packaging and Shipping — Materials Handling — MRO and Safety Supplies — Office Supplies.

Make Sure Every Member of Your Staff Gets this "Better Purchasing" Tool

This Coupon Saves You 33 1/3%

Paul V. Farrell, *Editor*
PURCHASING MAGAZINE
205 E. 42nd St., New York 17, N.Y.

Please reserve copies of the May 23rd VALUE ANALYSIS Issue for individuals listed below—at pre-publication price of \$1 per copy. (Regular price will be \$1.50.) ☐ Payment enclosed. ☐ Send bill.

Name

Title

Address

3/14/60

POWELL DEPENDABLE VALVES

Performance makes the world of difference

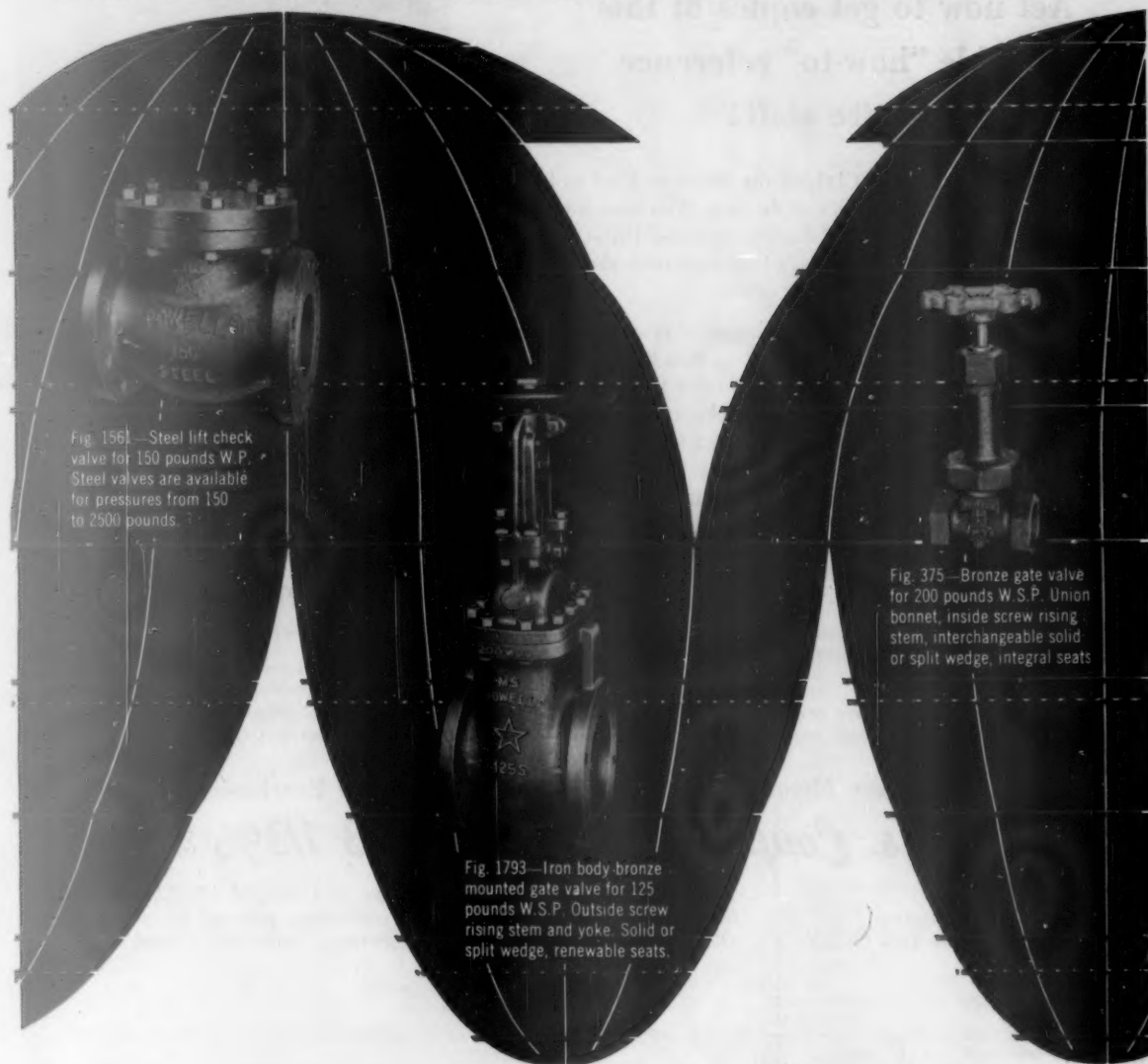


Fig. 1561—Steel lift check valve for 150 pounds W.P. Steel valves are available for pressures from 150 to 2500 pounds.

Fig. 1793—Iron body bronze mounted gate valve for 125 pounds W.S.P. Outside screw rising stem and yoke. Solid or split wedge, renewable seats.

Fig. 375—Bronze gate valve for 200 pounds W.S.P. Union bonnet, inside screw rising stem, interchangeable solid or split wedge, integral seats

No matter what your flow control requirements may be—handling water, oil, gas, air, steam, corrosive fluids—Powell Valves can be depended upon to take care of them to your complete satisfaction.

All types are available—in bronze, iron, steel and such corrosion-resistant metals and alloys as stainless steel,

nickel, Monel metal, and others—for pressures from 125 to more than 2500 pounds WP—and temperatures from sub-zero to super-heat.

Most of these valves are in stock for immediate delivery. So one quick call to your nearest Powell Valve distributor or directly to us can fill all your valve needs.

Powell... world's largest family of valves

THE WM. POWELL COMPANY • DEPENDABLE VALVES SINCE 1846 • CINCINNATI 22, OHIO

For More Information Write No. 315 on Inquiry Card—Page 32



Picks up \$97,000 saving in screws



**Fastener survey by RB&W cites big saving
in simple substitution of fastener types
... no engineering changes needed**

There were no engineering changes at all involved in this hard-to-believe case of cost reduction. The RB&W Fastener Man, called in to survey the use of fasteners in this particular company's machine, was asked to submit recommendations on a size for size substitution only.

Annual production consumed about 1½ million fasteners. Since the RB&W fastener specialist saw neither a design nor appearance reason for the costly alloy fasteners being used, he suggested (1) clutch head screws to replace the existing alloy screws; (2) standard bright

and high carbon hex screws to be used at all other locations. Just that simple. At prevailing prices, costs of parts studied totaled \$120,000; cost of the suggested fasteners: only \$23,000... a whopping, realizable \$97,000 saving. Pure profit!

Are you *sure* you're not wasting fastener dollars? True, the savings offered may be more modest than the special case above. But they're certainly worth looking for through the eyes of an RB&W fastener expert. No obligation. Write Russell, Burdsall & Ward Bolt & Nut Company, Port Chester, New York.



Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. Sales agents at: Cleveland, Milwaukee; New Orleans; Denver, Fargo. Distributors from coast to coast.


For More Information Write No. 152 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 153 on Inquiry Card—pg. 32→


Off-hand belt polishing means faster production for a wide variety of products

Finishing operations using BEHR-MANNING coated abrasive belts are resulting in better quality and greater production for products of all sorts of shapes, sizes, uses and materials. Cost and time-savings in many cases


are extraordinary. If you would like to arrange a group showing of our comprehensive and documented movie, "Better Offhand Polishing with Coated Abrasive Belts" write Dept. PU-3.




8 steps were eliminated finishing cast brass spouts by changing to belts. Parts are roughed and polished in just two operations.




Finishing costs dropped from 4 1/2 cents to 1 cent on these golf heads, and production increased to 50 heads per hour.




25% saving in finishing time with belts for these power-tool motor housings. Four finishing steps were reduced to two.




Proper fixturing plus belt finishing increased production 50% for these automobile wrench sockets.




With this fixture, operator polishes 336 tapered steel table legs per hour. The legs feed across the abrasive belt.




600 of these knurled cap screws for electric fans are polished per hour by one operator, and ready for final chrome plating.



Spin-roughing zinc automobile parts prior to painting. Parts are held on a wheel-like wooden form that rotates.



Deburring brass armatures faster with 80-grit RESINALL METALITE belt running over a compressed canvas contact wheel.



With one pass, operator now grinds the radius on refrigerator compressor crankshafts, using specially-mounted contact wheel.

BEHR-MANNING CO.

TROY, NEW YORK

A DIVISION OF NORTON COMPANY



BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes • Floor Maintenance Products
NORTON PRODUCTS: Abrasives • Grinding Wheels • Machine Tools • Refractories • Electro-Chemicals

In Canada: Behr-Manning (Canada) Ltd., Brantford. • For Export: Norton International Inc., Troy, New York, U. S. A.



